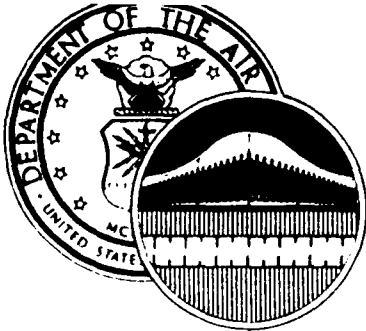


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UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT



F-15 AVIONIC SYSTEMS
CAREER LADDER

AFSC 452X1A/B/C

AFPT 90-452-851

APRIL 1990

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OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150-5000

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HQ USAFE/TTGT	1		1	
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3400 TCHTW/TTS (LOWRY AFB CO)	1		1	
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PREFACE

This report presents the results of an Air Force Occupational Survey of the F-15 Avionic Systems career ladder (AFSC 452X1 A/B/C). Authority for conducting occupational surveys is contained in AFR 35-2. Computer products upon which this report is based are available for use by operations and training officials.

The survey instrument was developed by Mr Donald J. Cochran, Inventory Development Specialist. Mr Wayne Fruge, Computer Programmer, provided computer support for this project. Administrative support was provided by Ms Tamme Lambert. Second Lieutenant Lisa A. Boyce analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Charles D. Gorman, Chief, Airman Analysis Branch, USAF Occupational Measurement Center.

An F-15 Avionic Systems Training Requirements Analysis (TRA) is being accomplished in conjunction with the F-15 Avionic Systems OSR. The TRA will provide a comprehensive data base to support anticipated training decisions for the career field. It consists of three sections: a) System Overview--an overall perspective of the career ladder training; b) Task Analysis--detailed training decisions data for career ladder technical tasks; and c) Training Requirements/Recommendations--what should be trained, when training should occur, and where training should be provided. Copies of the TRA may be obtained from USAF Occupational Measurement Center, Detachment 5, Lowry AFB CO 80230-5000.

Copies of this occupational survey report are distributed to Air Staff sections, Major Commands, and other interested training management personnel (see distribution on page i). Additional copies are available upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph AFB, Texas 78150-5000.

BOBBY P. TINDELL, Colonel, USAF
Commander
USAF Occupational Measurement
Center

JOSEPH S. TARTELL
Chief, Occupational Analysis Division
USAF Occupational Measurement
Center

SUMMARY OF RESULTS

1. Survey Coverage: Survey results are based on responses from 1,041 F-15 Avionic Systems specialists (AFSC 452X1 A/B/C). This represents 65 percent of all assigned 452X1 airmen. Incumbents were surveyed across various major commands and include only 3-, 5-, and 7-skill level personnel.
2. Career Ladder Structure: Seven clusters and six independent job types are identified in the 452X1 specialty. The career ladder structure is organized around the different avionic systems which 452X1 airmen maintain. One job, the Multisystems cluster, incorporates tasks associated with all three avionic systems, Attack Control, Instrument and Flight Control, and Communication, Navigation, and Penetration Aids Systems. The other major jobs include Avionic Systems Training and Logistics Support. Nontechnical functions, such as supervisory and managerial tasks, are primarily performed in the Avionic Systems Supervisor job. This career ladder structure information is helpful in verifying the utilization and training of the F-15 Avionic Systems specialty which was restructured under the 1987 Rivet Workforce program.
3. Career Ladder Progression: Both 3- and 5-skill level personnel are performing jobs primarily technical in nature, with little responsibility for supervision and management. The jobs performed by 7-skill level airmen reflect a decline in the time spent performing technical tasks, while supervisory responsibilities increase substantially.
4. AFR 39-1 Specialty Descriptions: The descriptions in AFR 39-1 for the 452X1 F-15 Avionic Systems career ladder provide a broad and accurate overview of the tasks and duties performed.
5. Training Analysis: A review of the 452X1 A/B/C training documents reveals all areas are supported by survey data. Specifically, all matched performance level objectives in both the Specialty Training Standard (STS) and J4ABF45231 A/B/C Course Training Standards (CTS) have greater than 20 percent of the appropriate 452X1 airmen performing related tasks. Similarly, all tasks matched to both the Phase I and Phase II Plans of Instruction (POI) objectives have greater than 30 percent of first-enlistment personnel performing. However, several tasks with sufficient members performing are not referenced to the STS, CTSs, and POIs. Survey data suggest that a review of the STS, CTSs, and POIs is necessary to determine areas which might be appropriate for possible expansion to include these additional items in the training documents.
6. Job Satisfaction: Overall, respondents are generally satisfied with their jobs. Members in each career ladder job responded with similar high overall percentages of satisfied members across four indicators, with the exception of the Logistics Support cluster which indicated relatively lower overall satisfaction. Job satisfaction is similar or slightly higher between the F-15 Avionic Systems career ladder and a comparative sample of Mission Equipment Maintenance personnel surveyed in 1988. All 452X1 enlistment groups perceive

higher utilization of their training than their counterparts in the comparative sample. Also, levels of satisfaction in the current survey show a higher view of job interest and utilization of talents and training for first- and second-enlistment members than was noted in the 1982 OSRs.

7. MAJCOM Analysis: Analysis identified no unexpected differences between MAJCOMs. The major distinctions noted were between Air Force Logistics Command (AFLC), Air Training Command (ATC), and the remaining commands. AFLC members are primarily involved in Aircraft Battle Damage Repair, while ATC's mission revolves around training. To support these missions, each command performs a distinct array of discriminating tasks. Dissimilarities noted are due to the distinguishing tasks performed to support their missions.

8. Implications: The AFSC 452X1 A/B/C career ladder is fairly diverse, with a variety of tasks relating to specific avionic systems being maintained by specialized groups of individuals across the ladder. The AFR 39-1 job descriptions are adequate for the 3-, 5- and 7-skill levels. In terms of training documents, one significant discrepancy is noted. Several high performance tasks are not referenced to the STS, CTSs, and POIs. Job satisfaction is positive for the jobs identified, except for the relatively lower levels noted by Logistics Support cluster personnel. When compared to other Mission Equipment Maintenance personnel, 452X1 members show similar or slightly higher levels of satisfaction. Similarly, minor improvement in satisfaction levels is also noted when compared to previous OSR data published in 1982.

OCCUPATIONAL SURVEY REPORT
F-15 AVIONIC SYSTEMS CAREER LADDER
(AFSC 452X1 A/B/C)

INTRODUCTION

This is a report of an occupational survey of personnel in the F-15 Avionic Systems career ladder completed by the Occupational Analysis Division, USAF Occupational Measurement Center, in March 1990. No previous occupational survey has been conducted for this career ladder. However, three separate Occupational Survey Reports (OSR) were published which included F-15 Avionic Systems personnel prior to their AFSC conversion in April 1987. These OSRs and their dates of completion are shown below:

March 1982 - 326X6 A/B/C (Attack Control Systems)
March 1982 - 326X7 A/B/C (Instrument and Flight Control Systems)
June 1982 - 326X8 A/B/C (Communication, Navigation, and Penetration Aids Systems).

The "B" shred (AFSC 326X6B, 326X7B, and 326X8B) identifies the F-15 personnel. These career ladders have been restructured and recoded as AFSC 452X1 A/B/C under the April 1987 Air Staff initiative "Rivet Workforce."

This survey was requested by the Chief of Maintenance and Acquisition Logistics Policy Division, HQ USAF/LEYM; and the Chief of Aircraft Munitions Maintenance Training Division, HQ ATC/TTOA. The primary purpose of this Occupational Survey Report is to assist verification of utilization and training of the resultant restructured F-15 Avionic Systems program. The survey data will also assist in future consolidation efforts of the Phase II field training detachment (FTD) courses with the current Phase I fundamental courses located at Lowry AFB. A merger of the J4ABF45231A/B/C-002 courses with the G3AQR45231A/B/C-000 courses is projected to occur in the spring of 1991. The OSR data should greatly enhance the efficiency of the conversion process, as well as training document revision efforts.

Background

According to AFR 39-1 Specialty Descriptions for AFSC 452X1 A/B/C, dated 1 Feb 88, F-15 Avionic Systems personnel analyze malfunctions, inspect, install, maintain, and troubleshoot F-15 avionic systems at the organizational level. In addition, they also inspect, service, and perform general aircraft handling procedures. AFSC 45271 technicians perform or supervise many of these same functions.

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AFSC 452X1 A/B/C members maintain five models of the F-15: "A," "B," "C," "D," and "E." The shred (suffix) denotes the F-15 avionic systems supported:

452X1A denotes Attack Control Systems

452X1B denotes Instrument and Flight Control Systems

452X1C denotes Communication, Navigation, and
Penetration Aids Systems

They perform their tasks strictly on the flightline.

The 452X1 specialty requires an ASVAB electronic score of "67" and an "X" factor of "K" (70 lbs) to qualify for entry. Completion of high school with courses in physics and mathematics is desirable. As a Category "A" training specialty, completion of the applicable basic avionic systems courses is mandatory for award of the semiskilled AFSC. Currently, this includes a 42-day electronic principles course (3AQR32020-006) followed by the appropriate apprentice course (G3AQR45231A-000, G3AQR45231B-000, or G3AQR45231C-000) located at Lowry AFB CO. Respectively, these courses are 59, 65, and 68 days in duration and only instruct on knowledge and theory. Upon successful completion of the resident training, students must attend the applicable Phase II FTD Course (J4ABF45231A-002, J4ABF45231B-002, or J4ABF45231C-002) for hands-on training (see Figure 1).

The student flow for FY 89 was 34. The projected student flow for FY 90 is 167. The elimination rate is planned at 5 percent, but in FY 89 there were no washouts from the resident course.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-452-851. A preliminary task list was prepared by the Inventory Developer after carefully reviewing previous task lists, current career ladder publications, training documents, and directives to determine the appropriateness of each task. This tentative task list was refined and validated in the ladder through personal interviews with 42 subject-matter experts representing 2 operational bases and 1 training base. To ensure full coverage of the variety of tasks performed by career ladder members, representative bases where specific models of the F-15 are located, were identified by the HQ TAC Functional Manager. Operational units housed at the following bases were visited:

AFSC 452X1 A/B/C TRAINING PROGRAM

Lowry TTC

: Basic Electronic Principles :
 : 3AIQR32020-006 :
 : 42 Days :
 : :

PHASE I

: Attack Control Systems :	: Instrument and Flight Control Systems :	: Comm, Nav, & Pen Aids Systems :
: G3AQR45231A-000 :	: G3AQR45231B-000 :	: G3AQR45231C-000 :
: 59 Days :	: 65 Days :	: 68 Days :
: :	: :	: :

PHASE II

Field Training Detachment

: Attack Control Systems :	: Instrument and Flight Control Systems :	: Comm, Nav, & Pen Aids Systems :
: J4ABF45231A-002 :	: J4ABF45231B-002 :	: J4ABF45231C-002 :
: 20 Days :	: 15 Days :	: 19 Days :
: :	: :	: :

FIGURE 1

BASE	RATIONALE FOR VISIT
Holloman AFB NM	"A" and "B" models
Eglin AFB FL	"C" and "D" models
Lowry AFB CO	Technical Training Center

Other significant contacts with personnel having career ladder involvement included classification, training, and resource managers; the Air Force functional manager; and the HQ ATC Training Staff Officer.

This process resulted in a final job inventory containing 451 tasks organized under 10 duty headings. Also included was a background section requesting such information as grade, time in service, job satisfaction, reenlistment intentions, functional area, position title, aircraft maintained, test equipment used, and aircraft system or support equipment operated.

Survey Administration

From April through August 1989, Consolidated Base Personnel Offices (CBPO) at operational bases worldwide administered the inventory to all eligible DAFSC 452X1 A/B/C personnel. Members eligible for the survey consisted of the total assigned population, excluding the following: (1) hospitalized personnel; (2) members in transition for a permanent change of station; (3) members retiring during the time inventories were administered to the ladder; and (4) members in the job less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the AF Human Resources Laboratory (AFHRL).

Each individual who filled out an inventory booklet first completed an identification and biographical information section, and then checked each task performed in their current job. Next, members rated these tasks on a 9-point scale showing relative time spent on each task as compared to all other tasks checked. Ratings ranged from 1 (very small amount of time spent) to 9 (very large amount of time spent).

To determine relative percent time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job. The rating for each task is divided by the sum of all the ratings, then multiplied by 100 to provide a relative percentage of time for each task. This procedure provides the basis for comparing tasks in terms of both percent members performing and average relative percent time spent.

Survey Sample

Personnel were selected to participate in this survey to ensure accurate representation across major commands (MAJCOM) and paygrade groups. Table 1 displays the MAJCOM distribution of survey respondents corresponding with the percent of assigned personnel as of March 1989. As shown in Table 1, the

TABLE 1
COMMAND REPRESENTATION OF SURVEY SAMPLE
AFSC 452X1 A/B/C

COMMAND	452X1 A/B/C		452X1A		452X1B		452X1C	
	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
TAC	61	60	62	65	59	57	61	63
USAFE	12	15	11	12	13	15	14	14
PACAF	10	11	11	13	12	13	8	10
ATC	7	5	7	3	5	5	8	3
AFSC	5	4	3	2	6	6	5	5
AAC	4	4	5	5	4	3	4	4
AFLC	1	-	-	-	1	-	1	1

Total Assigned: * 1,594
Total Eligible for Survey: ** 1,460
Total in Sample: 1,041
Percent of Assigned in Sample: 65%
Percent of Eligible in Sample: 71%

- Less than 1 percent
- * Assigned strength as of March 1989
- ** Excludes those in PCS, retirement, discharge, or hospital status; and those with less than 6 weeks on the job

NOTE: Columns may not add to 100 percent due to rounding

majority of 452X1 A/B/C members are assigned to TAC. In addition, Table 2 displays survey respondents across paygrade groups. As illustrated in these tables, the survey sample of all three shreds is representative and comprehensive.

Task Factor Administration

Selected senior personnel completed a second booklet in addition to the job inventory booklet. This second booklet is used to gather information for either training emphasis (TE) or task difficulty (TD). The TE and TD booklets are processed separately from the job inventories and provide task rating information which is used in a number of different analyses discussed in more detail in the following section of this report.

Task Difficulty (TD). Task difficulty is defined as the length of time an average airman needs to learn a task. Given this definition, 62 senior technicians rated the difficulty of all the inventory tasks on a 9-point scale (from extremely low to extremely high). To ensure the validity of the ratings, each technician's rating was compared to those of every other senior technician's rating. A statistical measurement of rating agreement, known as the interrater reliability, indicated acceptable agreement among raters as to the relative difficulty of the tasks. Task difficulty ratings were adjusted so tasks of average difficulty would have ratings of 5.00. The resulting data are essentially a rank ordering of tasks indicating the degree of difficulty for each task in the inventory.

Training Emphasis (TE). Training emphasis is a rating of which tasks require structured training for first-term personnel. Experienced technicians (primarily 7-skill level) completing TE booklets were asked to rate tasks on a 10-point scale (from no training emphasis to extremely high training emphasis). Ratings for first-term personnel were independently collected from 60 NCOs. To ensure validity of the ratings, each technician's ratings were compared to those of every other senior technician's ratings. A statistical measurement of their agreement, known as the interrater reliability, was again found to be acceptable. The average TE rating for the career field is 2.92, with a standard deviation of 1.99. These data also provide essentially a rank ordering of tasks, whereby those with the highest ratings are perceived as most important for structured training.

TE ratings provide objective information which should be used along with task difficulty and percent members performing data when making training decisions. Percent members performing data provide information on how many personnel perform the tasks; TE and TD ratings provide insights on which tasks need training. Using these factors, in conjunction with appropriate training documents and directives, career ladder managers can tailor training programs to accurately reflect the needs of the user by more effectively determining when, where, and how to train first-enlistment AFSC 452X1 A/B/C personnel.

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE
AFSC 452X1 A/B/C

PAYGRADE	452X1 A/B/C		452X1A		452X1B		452X1C	
	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
AIRMAN	26	23	26	21	33	30	40	38
E-4	25	27	33	35	34	35	25	29
E-5	31	32	38	39	30	30	34	31
E-6	12	12	3	5	3	4	2	3
E-7	6	6	**	1	0	1	0	**
E-8	**	**	0	0	0	0	0	0

* Assigned strength as of March 1989

** Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

Data Processing and Analysis

Once job inventories are returned from the survey incumbents, task responses and background information are optically scanned and entered into a UNISYS 11000 mainframe computer. Computer-generated programs, using Comprehensive Occupational Data Analysis Program (CODAP) techniques, are then applied to the data.

CODAP produces composite job descriptions for respondents based on their ratings of specific inventory tasks. These job descriptions provide information on percent members performing each task, the relative average percent time spent performing tasks, and the cumulative percent time spent by all members performing tasks in the inventory. In addition to the job descriptions based upon inventory task data, the program produces summaries that show how members of each group responded to each background item. Background items aid in identifying characteristics of the group, such as DAFSCs represented, time in career ladder, total active federal military service (TAFMS), experience in various functional areas, equipment operated, and job satisfaction levels.

SPECIALTY JOBS (Career Ladder Structure)

A key aspect of the USAF Occupational Analysis Program is to examine the job structure of a career ladder. Based on incumbent responses to survey questions, the tasks performed by career ladder personnel are examined and jobs are identified based on the similarity of tasks and the relative time they spend performing the tasks. The resulting job structure is then compared to official career ladder documents. This information can be used to examine the accuracy and completeness of career ladder documents (AFR 39-1 Specialty Descriptions and Specialty Training Standards) and to gain an understanding of current utilization patterns.

For this report, the career ladder structure is described in terms of clusters and independent job types. The job type is the basic unit of job analysis. It represents a specific group of individuals performing basically the same tasks and spending similar amounts of time on those tasks. When job type members perform tasks in common with other groups, they merge to form a larger unit of related jobs termed a cluster. Specialized job types too dissimilar to fit within a cluster are labeled independent job types (IJT).

Structure Overview

The specialty job structure of the F-15 Avionic Systems career ladder was determined by performing a job type analysis of the survey data provided by the 1,041 survey respondents. The jobs performed by these airmen separated into seven clusters and six independent job types, as shown in Figure 2.

AFSC 452X1 A/B/C CAREER LADDER STRUCTURE

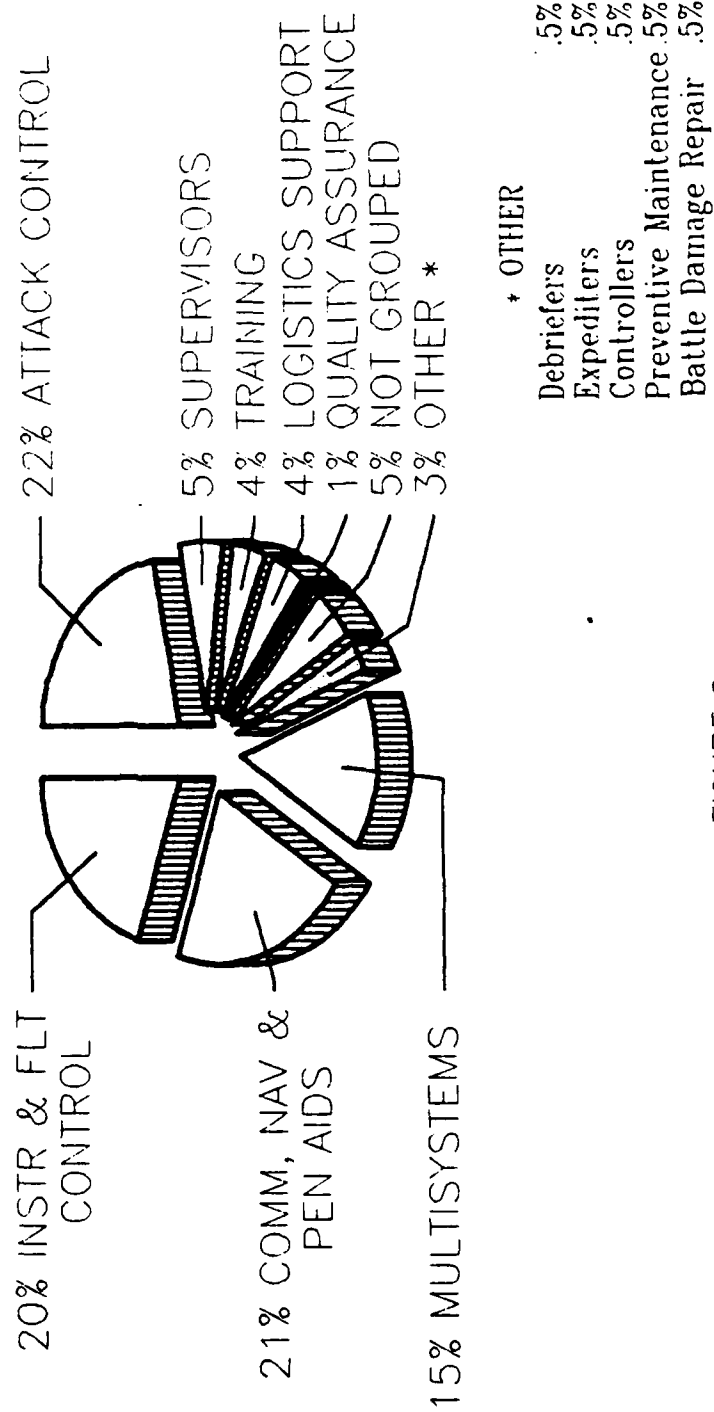


FIGURE 2

The seven clusters and six independent job types are listed below. The stage (STG) number beside each title is a computer-generated reference number. The letter "N" stands for the number of personnel in each group.

- I. ATTACK CONTROL SYSTEMS CLUSTER (STG112, N=230)
- II. INSTRUMENT AND FLIGHT CONTROL SYSTEMS CLUSTER (STG098, N=206)
- III. COMMUNICATION, NAVIGATION, AND PENETRATION AIDS SYSTEMS CLUSTER (STG071, N=219)
- IV. MULTISYSTEMS CLUSTER (STG116, N=155)
- V. AVIONIC SYSTEMS TRAINING CLUSTER (STG024, N=39)
- VI. AVIONIC SYSTEMS SUPERVISORS CLUSTER (STG049, N=55)
- VII. LOGISTICS SUPPORT CLUSTER (STG044, N=37)
- VIII. QUALITY ASSURANCE INSPECTORS IJT (STG079, N=8)
- IX. DEBRIEFERS IJT (STG060, N=5)
- X. FLIGHTLINE EXPEDITERS IJT (STG078, N=5)
- XI. CONTROLLERS IJT (STG061, N=5)
- XII. PREVENTIVE MAINTENANCE IJT (STG130, N=5)
- XIII. AIRCRAFT BATTLE DAMAGE REPAIR IJT (STG092, N=5)

Ninety-four percent of the survey respondents are represented in the above job groups. The remaining 6 percent performed jobs that did not group with any of the defined jobs. Brief descriptions of each cluster and independent job type are presented below. In addition, Table 3 provides selected background information across these jobs, while Appendix A lists common tasks performed by incumbents in these groups.

Descriptions of Career Ladder Jobs

I. ATTACK CONTROL SYSTEMS CLUSTER (STG112, N=230). These 230 airmen form the largest group, representing 22 percent of the total survey sample. They primarily perform the technical flightline maintenance of the attack control systems on the five models of the F-15 aircraft. While nearly 90 percent of the personnel in this job hold the "A" shred designator, several members indicated they also work with the "B" (Instrument and Flight Control), and "C" (Comm, Nav, and Pen Aids) avionic systems. The first-line shift

TABLE 3

SELECTED BACKGROUND DATA FOR CAREER LADDER JOBS

	ATTACK CONTROL SYSTEMS CLUSTER (SIG112)	INSTR & FLT CONTROL SYSTEMS CLUSTER (SIG098)	COMM, NAV & PEN AIDS SYSTEMS CLUSTER (SIG071)	MULTI- SYSTEMS CLUSTER (SIG116)	AVIONIC TRAINING CLUSTER (SIG024)	AVIONIC SUPERVISORS CLUSTER (SIG049)	LOGISTICS SUPPORT CLUSTER (SIG044)
NUMBER IN GROUP	230	206	219	155	39	55	37
PERCENT OF SAMPLE	22%	20%	21%	15%	4%	5%	4%
PERCENT IN CONUS	71%	66%	70%	55%	79%	64%	57%

DAFSC DISTRIBUTION
(PERCENT):

45231A	19%	0%	1%	*	0%	2%	8%
45251A	70%	*	0%	32%	10%	18%	32%
45231B	0%	33%	0%	1%	0%	0%	3%
45251B	*	62%	*	17%	36%	5%	19%
45231C	0%	*	34%	0%	0%	0%	0%
45251C	*	0%	58%	18%	21%	4%	22%
45271	10%	4%	6%	32%	33%	71%	16%

PREDOMINATE PAYGRADES	E-4	E-4	E-3	E-5	E-5	E-7	E-4
AVERAGE TICF (MOS)	50	46	42	90	97	112	82
AVERAGE TAFMS (MOS)	67	58	55	119	109	179	98
PERCENT IN 1ST ENL	47%	58%	58%	1%	0%	4%	46%

AVERAGE NUMBER OF TASKS PERFORMED	107	127	97	228	40	67	37
AVERAGE NUMBER PERSONS SUPERVISED	1	1	2	6	1	9	3

* Less than 1 percent

TABLE 3 (CONTINUED)
SELECTED BACKGROUND DATA FOR CAREER LADDER JOBS

	QUALITY ASSURANCE IJT (SIG079)	DEBRIEFERS IJT (SIG060)	FLIGHTLINE EXPEDITERS IJT (SIG078)	CONTROLLERS IJT (SIG061)	PREVENTIVE MAINTENANCE IJT (SIG130)	BATTLE DAMAGE REPAIR IJT (SIG092)
NUMBER IN GROUP	8	5	5	5	5	5
PERCENT OF SAMPLE	1%	.5%	.5%	.5%	.5%	.5%
PERCENT IN CONUS	88%	80%	80%	40%	80%	80%
AFSC DISTRIBUTION (PERCENT):						
45231A	0%	0%	0%	0%	0%	0%
45251A	13%	20%	20%	20%	20%	20%
45231B	0%	0%	0%	0%	0%	0%
45251B	0%	60%	0%	0%	0%	20%
45231C	0%	0%	0%	0%	0%	0%
45251C	0%	20%	0%	40%	20%	60%
45271	88%	0%	80%	40%	60%	0%
PREDOMINATE PAYGRADES						
	E-5/E-7	E-5	E-6	E-5	E-5/E-7	E-5
AVERAGE TICF (MOS)	94	56	78	79	77	92
AVERAGE TAFMS (MOS)	162	87	206	148	155	97
PERCENT IN 1ST ENL	0%	40%	0%	0%	0%	0%
AVERAGE NUMBER OF						
TASKS PERFORMED	65	12	16	11	123	43
AVERAGE NUMBER						
PERSONS SUPERVISED	2	1	5	2	4	0

supervisors, as well as a unique group of four specialists performing operational testing and evaluation (OT&E) of radar systems software, were also identified in this job. The shift supervisors and OT&E personnel perform the standard maintenance tasks on the attack control system, as well as additional supervisory and testing/developing tasks. On the average, members report performing 107 tasks. Common tasks include:

- Isolate malfunctions within inertial navigation systems (INS)
- Isolate malfunctions within HUD systems
- Remove or install RDR system LRUs
- Remove or install waveguides
- Isolate malfunctions within central computer (CC) systems
- Perform operational checkout and BIT of HUD systems

Comprised mostly of 5-skill level personnel, these incumbents average 5 1/2 years of total active federal military service (TAFMS) and predominantly hold the rank of E-4 or E-5.

II. INSTRUMENT AND FLIGHT CONTROL SYSTEMS CLUSTER (STG098, N=206). The 206 members of this job represent 20 percent of the total survey sample. The overall mission of these members involves flightline maintenance on instrument and flight control systems. Ninety-five percent of the personnel in this job hold the "B" shred designator; however, several of the members indicated they also perform work on the "A" (Attack Control) and "C" (Comm, Nav, and Pen Aids) avionics systems. Shift supervisors responsible for Avionic Instrument and Flight Control Systems specialists were also identified. Several pieces of test equipment are unique to this job. Examples include angle-of-attack probe torque tester, automatic flight control systems (AFSCS), compass calibrator, inflight monitor, linear gauge, flight logic test set, fuel quantity tester, and torque strap adapter. Of the average 127 tasks performed by these incumbents, typical tasks include:

- Isolate malfunctions within air inlet control systems (AICS)
- Isolate malfunctions within attitude heading reference systems (AHRs)
- Perform operational checkout and BIT of AHRs
- Isolate malfunctions within automatic flight control systems (AFSCS)
- Isolate malfunctions within fuel flow indicating systems
- Isolate malfunctions within fuel quantity indicating systems

Comprised mostly of 5-skill level personnel, 34 percent of the group is located overseas. Overall, they have an average TAFMS of nearly 5 years and are predominantly in paygrades E-4.

III. COMMUNICATION, NAVIGATION, AND PENETRATION AIDS SYSTEMS CLUSTER (STG071, N=219). This large group of 219 airmen comprises 21 percent of the total survey sample. They primarily perform flightline maintenance on F-15 aircraft communication, navigation, and penetration aids (comm, nav, and pen aids) systems. Over 90 percent of these specialists hold the "C" shred designator. However, several of these members indicated they also maintain the "A" and "B" avionic systems. First-line shift supervisors responsible for Comm, Nav, and Pen Aids Systems specialists were also identified in this cluster. Several pieces of test equipment are unique to this job including improved radar simulator (AN/APM-427), air-to-air IFF interrogator test set, IFF transponder (AN/ASM-424) test set, instrument landing system (ILS) test set, WATTS tester, and thru-line WATT meter. Of the average 97 tasks performed by these incumbents, representative tasks include:

- Perform operational checkout and BIT of AAI systems
- Perform operational checkout and BIT of IFF systems
- Isolate malfunctions within identification friend or foe (IFF) systems
- Isolate malfunctions within air-to-air IFF interrogator (AAI) systems
- Isolate malfunctions within ultra high Frequency (UHF) communication and audio signal systems

Comprised mostly of 5-skill level personnel, 30 percent of the group is located overseas. Overall, they have an average TAFMS of slightly over 4 1/2 years and are predominantly in paygrades E-3 and E-4.

IV. MULTISYSTEMS CLUSTER (STG116, N=155). This diverse group of 155 airmen represents a comprehensive segment of the F-15 Avionic System specialty. Members in this group perform tasks associated with all three avionic systems. Nineteen percent of their relative job time is spent maintaining instrument and flight control systems. Sixteen percent of their job time is spent maintaining attack control systems, and an additional 15 percent is spent maintaining communication, navigation, and penetration aids systems. These members, by performing the spectrum of duties, exemplify the objectives of the Rivet Workforce program. These airmen perform an average of 228 tasks, substantially more than any other job group. Common tasks include:

- Perform aircraft safe for maintenance checks
- Trace wiring, system, and interface diagrams
- Position or remove aircraft chocks or safety pins
- Remove or install INS LRUs
- Perform operational checkout and BIT of IG systems
- Remove or install coaxial cables
- Remove or install ADC system LRUs
- Remove or install AAI system line replaceable units (LRU)
- Remove or install ADF system LRUs

This job group is comprised mostly of 5-skill level personnel. Thirty-two percent hold an "A" shred designation, 17 percent hold a "B" shred designation; and 18 percent are "C" shred specialists. Approximately 45 percent of this group is located overseas, representing the largest concentration of personnel based overseas. Overall, they have an average TAFMS of slightly under 10 years and are predominantly in paygrade E-5.

V. AVIONIC SYSTEMS TRAINING CLUSTER (STG024, N=39). This group of 39 individuals represent 4 percent of the total survey sample. The majority of these members are instructors at either the basic school at Lowry TTC or at one of the seven Field Training Detachments (FTD). F-15 Avionic Systems FTD courses are located at Eglin, Holloman, Langley, Luke, Nellis, Seymour Johnson, and Tyndall Air Force Bases. Instructors teaching in one of these courses provide specialized training on a specific avionic system. Training NCOs, also identified in this cluster, are responsible for the unit training. They plan or schedule training, such as OJT and ancillary training. These airmen perform an average of 40 tasks. Typical tasks include:

- Administer tests
- Score tests
- Conduct resident course classroom training
- Counsel trainees on training progress
- Annotate training records

Approximately 85 percent of the personnel involved in avionic systems training are members of ATC, with 79 percent located on bases in the Continental United States (CONUS). Incumbents in this job have an average TAFMS of slightly over 9 years and are in paygrades E-4 through E-6. Over 98 percent have greater than 4 years in the career field, and 100 percent hold either a 5- or 7-skill level rating.

VI. AVIONIC SYSTEMS SUPERVISORS CLUSTER (STG049, N=55). The 55 members in this group represent the most senior level of personnel in the survey sample. The majority are in paygrade E-7, and 71 percent are qualified to a 7-skill level. With an average of nearly 15 years TAFMS, these incumbents devote approximately 76 percent of their time performing supervisory, managerial, or administrative functions. They supervise an average of nine people. Variations in this job identified three distinct classifications within the supervisory functions which include: NCOIC of Debriefers, Specialist Flight Chief, and Productions Supervisor. Representative tasks of the average 67 tasks performed by this group include:

- Write APRs
- Plan or schedule work assignments
- Establish performance standards for subordinates
- Inspect personnel for compliance with military standards

Write recommendations for awards and decorations
Interpret policies, directives, or procedures for
subordinates

VII. LOGISTICS SUPPORT CLUSTER (STG044, N=37). This group of 37 respondents, equating to 4 percent of the total survey sample, is responsible for the management and maintenance of supplies, tools, and equipment. Seventy-five percent of their relative job time is spent performing general administrative and supply tasks. Members perform an average of 37 tasks. Common tasks include:

- Inventory tools, such as consolidated tool kits (CTK)
- Inspect tools or equipment
- Issue tools, equipment, or supplies
- Maintain tool cribs
- Process tools or equipment for shipment or deployment

The majority of members hold a 5-skill level DAFSC with slightly under 7 years in the career field. With just over 8 years of TAFMS, these members are predominately in paygrade E-4.

VIII. QUALITY ASSURANCE INSPECTORS IJT (STG079, N=8). All eight members of this independent job type indicated a job title of "Quality Assurance Inspector." Primarily holding a 7-skill level, with an average of 13 1/2 years of TAFMS, they spend 24 percent of their job time inspecting and evaluating. These members perform an average of 65 tasks. Representative tasks include:

- Inspect flightline maintenance actions
- Initiate, annotate, or review aircraft flight or
maintenance records, such as AFTO Forms 781 series
- Develop quality assurance programs
- Evaluate suggestions

IX. DEBRIEFERS IJT (STG060, N=5). This independent job type includes five individuals who indicated their job title as "Debriefers." This job consists of debriefing aircrews on the avionic systems of the F-15 aircraft, as well as determining from the aircrew system problems after each flight. Individuals in this job may also be responsible for documenting the problems and analyzing them for trends. This is a 12-month position which rotates among the F-15 Avionic System specialists. Incumbents perform an average of 12 tasks. Representative tasks include:

- Evaluate personnel for compliance with performance standards or technical orders
- Maintain debriefing forms
- Debrief aircrews
- Analyze avionics status panel (ASP) latch data
- Evaluate maintenance and inspection report findings

Members in this group hold a 5-skill level, are in paygrade E-5, and average slightly over 7 years of TAFMS.

X. FLIGHTLINE EXPEDITERS IJT (STG078, N=5). The five individuals in this independent job type can be considered the flightline coordinators. As indicated, the formal job title is "Flightline Expeditors." Their main function involves directing and coordinating activities of maintenance personnel. Expeditors perform their job by patrolling the flightline and relaying the operational needs of the flightline to the controllers. On the average, these members perform 16 tasks. Representative tasks include:

- Coordinate maintenance work with appropriate personnel or agencies
- Determine work priorities
- Assign maintenance and repair work
- Determine logistics requirements, such as space, personnel, or equipment
- Adjust daily maintenance plans to meet operational commitments
- Direct flightline maintenance activities

Members in this group predominantly hold a 7-skill level, are in paygrade E-6, and average slightly over 17 years of TAFMS and 6 1/2 years in the career field.

XI. CONTROLLERS IJT (STG061, N=5). This independent job type acts as a separate control unit, coordinating operational requirements with maintenance resources. Controllers maintain a status board, assigning and tracking long term needs, as indicated by the expeditors, with the appropriate available manpower and equipment. Controllers are not to be confused with dispatchers who perform similar tasks, on a short term, in-unit basis. The dispatcher position rotates among F-15 Avionic Systems specialists every 90 days, while the Controller remains in the position for approximately 1 year. Incumbents in this job have an average TAFMS of slightly over 12 years and are in paygrade E-5. They hold a 5- or 7-skill level. Sixty percent of the personnel in the Controllers IJT are located on bases overseas. These airmen perform an average of only 11 tasks. Typical tasks include:

Coordinate maintenance work with appropriate personnel
or agencies
Maintain aircraft and parts status indicators, such as
boards, graphs, or charts
Maintain dispatch logs or boards

XII. PREVENTIVE MAINTENANCE IJT (STG130, N=5). This independent job type includes personnel who perform specialized maintenance on F-15 aircraft. These individuals are primarily 7-skill levels with the technical expertise to repair rare and difficult problems in a depot environment. Members of this IJT also indicated that they were acting as Flight Test Avionics Instrumentation Technicians involved in research and development. Eighty percent of the members in this job are in Air Force Systems Command or Air Force Logistics Command. Members in this group average just under 13 years of TAFMS. These experts perform, on the the average, 123 tasks. Representative tasks include:

Initiate, annotate, or review aircraft flight or
Perform preuse inspection of hydraulic test stands
or hydraulic power
Perform preuse inspection of oil servicing carts
Inspect aircraft wiring
Inspect electrical relays
Isolate malfunctions within electrical relays

XIII. AIRCRAFT BATTLE DAMAGE REPAIR IJT (STG092, N=5). This independent job type reflects another highly specialized job within the 452X1 career ladder. Airmen in this group participate in activities involving the repair of simulated battle damages. Although their primary purpose is to anticipate and repair problems on F-15 aircraft, usual simulations occur on C-130s or C-141s. Forty-three percent of their relative job time is spent performing general avionic systems maintenance tasks. Of the average 43 tasks these specialists perform, characteristic tasks include:

Remove or install coaxial cables
Remove or install multipin connectors (cannon plug)
Repair aircraft wing
Trace wiring, system and interface diagrams

These airmen have an average TAFMS of 8 years, are 5-skill level qualified, and hold a paygrade of E-5.

Comparison of Specialty Jobs

Analysis of the AFSC 452X1 A/B/C career ladder structure indicates that the F-15 Avionic Systems specialty may be considered somewhat diverse. This was made evident by the clear identification of the three avionic systems clusters. They account for a total of 655 members or 63 percent of the survey sample. Each of the three avionic systems: Attack Control, Instrument and Flight Control, and Communication, Navigation, and Penetration Aids, involves the performance of unique tasks associated with their respective system. The survey sample divided cleanly into separate shreds, with personnel in each system performing many tasks unrelated to their sister systems. However, one cluster contains personnel with the necessary skills and knowledges needed to maintain all three systems. The Multisystems cluster meets the Rivet Workforce objectives of minimizing an aircraft maintenance dependence on several system specialists. A Multisystems technician integrates the maintenance abilities of personnel from all three shreds. Although each of the specific systems jobs was similar in several respects (size of group, number of tasks performed, experience, skill level, etc.), the Multisystems cluster is smaller in group size, performs significantly more tasks, and on the average contains more senior and experienced airmen.

The remaining three clusters and four of the six independent job types are involved with nontechnical support functions. These jobs (Supervisory, Training, Logistics Support, Debriefers, Expeditors, and Controllers) represent 16 percent of the survey sample and contain members with all three shred designations. These support jobs enhance the quality and efficiency of F-15 Avionic Systems maintenance.

In summary, the career ladder structure indicates that members of the F-15 Avionic Systems specialty perform system specific tasks unique to members within each shred. However, these specialized jobs can be combined and performed by a single specialist as exemplified by members of the Multi-Systems cluster. The nontechnical tasks are not shred specific, with personnel performing support tasks to ensure the operational needs are met.

Job Structure Comparison to Previous Surveys

The results of the specialty job analysis were compared to three related Avionic Systems career ladders' occupational survey reports. As mentioned previously, three AFSCs (326X6B, 326X7B, and 326X8B) were merged to form the current 452X1 A/B/C specialty. The last occupational survey reports of AFSC 326X6 A/B/C, Attack Control Systems; AFSC 326X7 A/B/C, Instrument and Flight Control Systems; and AFSC 326X8 A/B/C, Communication, Navigation, and Penetration Aids Systems, were completed in 1982.

Table 4 lists the major jobs identified in the 1990 survey and their equivalent jobs from the 1982 OSRs. A review of the jobs performed by the current sample indicates that most of the 1990 job groups can be matched to similar jobs performed by the "B" shred F-15 Avionic Systems job groups identified in the 1982 reports. Overall, 11 of the 13 current jobs have an equivalent counterpart in at least one of the previous studies. The two jobs

TABLE 4

COMPARISON OF MAJOR JOBS BETWEEN SURVEYS

CURRENT SURVEY	1982 SURVEYS
ATTACK CONTROL SYSTEMS TECHNICIANS	AFSC 326X6B F-15 TECHNICAL MAINTENANCE PERSONNEL
INSTRUMENT AND FLIGHT CONTROL SYSTEMS TECHNICIANS	AFSC 326X7B F-15 MAINTENANCE PERSONNEL
COMMUNICATION, NAVIGATION, AND PENETRATION AIDS SYSTEMS TECHNICIANS	AFSC 326X8B F-15 FLIGHTLINE MAINTENANCE PERSONNEL
MULTI-SYSTEMS TECHNICIANS	AFSC 236X6B INTEGRATED AVIONICS ATTACK; INSTRUMENTS AND FLIGHT CONTROL SYSTEMS MAINTENANCE PERSONNEL
	AFSC 236X7B F-15 INSTRUMENT, FLIGHT CONTROL, ATTACK CONTROL, AND COMMUNICATION, NAVIGATION, PENETRATION AIDS SYSTEMS MAINTENANCE PERSONNEL
AVIONIC SYSTEMS TRAINING	AFSC 326X6B F-15 FTD INSTRUCTORS AFSC 326X6B TECHNICAL SCHOOL INSTRUCTORS
	AFSC 326X7B F-15/F-16 FTD INSTRUCTORS AFSC 326X7B TECHNICAL SCHOOL INSTRUCTORS
	AFSC 326X8B FTD AND TECHNICAL SCHOOL INSTRUCTORS
AVIONIC SYSTEMS SUPERVISORS	AFSC 326X6B SUPERVISION AND MANAGEMENT PERSONNEL
	AFSC 326X7B MANAGEMENT AND SUPERVISION PERSONNEL
	AFSC 326X8B SUPERVISORY PERSONNEL

TABLE 4 (CONTINUED)
COMPARISON OF MAJOR JOBS BETWEEN SURVEYS

CURRENT SURVEY	1982 SURVEYS
LOGISTICS SUPPORT TECHNICIANS	AFSC 326X6B DUE-IN-FOR-MAINTENANCE MONITORS
	AFSC 326X8B TOOL CRIB PERSONNEL
QUALITY ASSURANCE INSPECTORS	AFSC 326X6B QUALITY CONTROL PERSONNEL
	AFSC 326X7B QUALITY CONTROL PERSONNEL
	AFSC 326X8B QUALITY ASSURANCE INSPECTORS
DEBRIEFERS	AFSC 326X6B BRIEFERS
	AFSC 326X7B ADMINISTRATIVE PERSONNEL
FLIGHTLINE EXPEDITERS	AFSC 326X6B ADMINISTRATIVE MANAGERS
CONTROLLERS	AFSC 326X8B JOB CONTROL COORDINATORS
PREVENTIVE MAINTENANCE	NOT IDENTIFIED IN PREVIOUS SURVEYS
AIRCRAFT BATTLE DAMAGE REPAIR	

not identified in the previous studies (Preventive Maintenance IJT and Battle Field Damage Repair) represent less than 1 percent of the current sample and perform highly specialized, nonroutine tasks on the F-15 or other aircraft. With these exceptions, the basic structure of F-15 Avionic Systems has remained basically the same despite major reorganization.

ANALYSIS OF DAFSC GROUPS

In addition to the analysis of the career ladder structure, an examination of the jobs and tasks performed at each skill level is helpful in understanding the F-15 Avionic Systems specialty. The DAFSC analysis compares the skill levels to identify differences in task performance. This information may then be used to determine whether personnel are utilized in the manner specified by the Specialty Description (AFR 39-1) and may serve as a basis for considering changes to current utilization policies and training programs.

Comparison of the duty and task performance between DAFSCs 45231A/31B/31C and 45251A/51B/51C indicates that, even though there are some minor differences, the jobs they perform within each shred are essentially the same. Therefore, each will be discussed as a combined group in this report. Examples of tasks distinguishing between these airmen include a larger percentage of 5-skill level personnel conduct OJT, maintain training records, and counsel trainees on training progress, as well as determine work priorities. The distribution of skill-level groups across specialty jobs is shown in Tables 5A, 5B, and 5C, while Tables 6A, 6B, and 6C list the relative time spent on each duty. Further discussion of this data is contained below.

Skill Level Descriptions

The 842 airmen in the 3- and 5-skill level groups (representing 81 percent of the 452X1 survey sample) perform an average of 107 tasks, with 94 tasks accounting for approximately 50 percent of their job time. As discussed in the introduction, 3- and 5-skill level are divided into three shreds based upon the type of avionic systems maintained by each group. A comparison of Tables 6A, 6B, and 6C, as well as Tables 7A, 7B, and 7C, is beneficial to understanding the similarities and differences in task performance between these groups. For instance, Table 6A illustrates A-shred personnel spend over 30 percent of their total job time maintaining attack control systems. Table 6B shows B-shred personnel spend over 40 percent of their job time maintaining instrument and flight control systems. Likewise, Table 6C shows C-shred personnel spend over 35 percent of their total job time maintaining communication, navigation, and penetration aids systems. These airmen also primarily perform the technical tasks associated with their shred designation. Examples of tasks likely to be performed by 3- and 5-skill level personnel include: connect or disconnect aircraft external power, perform aircraft safe for maintenance checks, connect or disconnect aircraft external cooling air units. More detailed job descriptions for the A-, B-, and C-shred journeyman-level airmen are presented in Table 7A, 7B, and 7C, respectively.

TABLE 5A
DISTRIBUTION OF 452X1A DAFSC GROUP MEMBERS
ACROSS CAREER LADDER JOBS
(NUMBER AND PERCENT RESPONDING)

CAREER LADDER JOBS	DAFSC 45231/51A (N=309)		DAFSC 45271 (N=197)	
	NBR	PCT	NBR	PCT
I. ATTACK CONTROL SYSTEMS (STG112, N=230)	206	67%	22	11%
II. INSTRUMENT AND FLIGHT CONTROL SYSTEMS (STG098, N=206)	1	*	8	4%
III. COMMUNICATION, NAVIGATION, AND PENETRATION AIDS SYSTEMS (STG071, N=219)	1	*	14	7%
IV. MULTI-SYSTEMS (STG116, N=155)	50	16%	49	25%
V. AVIONIC SYSTEMS TRAINING (STG024, N=39)	4	1%	13	7%
VI. AVIONIC SYSTEMS SUPERVISORS (STG049, N=55)	11	4%	39	20%
VII. LOGISTICS SUPPORT (STG044, N=37)	15	5%	6	3%
VIII. QUALITY ASSURANCE INSPECTORS (STG079, N=8)	1	*	7	4%
IX. DEBRIEFERS IJT (STG060, N=5)	1	*	0	0
X. FLIGHTLINE EXPEDITERS IJT (STG078, N=5)	1	*	4	2%
XI. CONTROLLERS IJT (STG061, N=5)	1	*	2	1%
XII. PREVENTIVE MAINTENANCE IJT (STG130, N=5)	1	*	3	2%
XIII. AIRCRAFT BATTLE DAMAGE REPAIR IJT (STG092, N=5)	1	*	0	0
NOT GROUPED (N=45)	<u>15</u>	<u>5%</u>	<u>30</u>	<u>15%</u>
TOTAL	309	100%	197	101%

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 5B
DISTRIBUTION OF 452X1B DAFSC GROUP MEMBERS
ACROSS CAREER LADDER JOBS
(NUMBER AND PERCENT RESPONDING)

<u>CAREER LADDER JOBS</u>		<u>DAFSC 45231/51B (N=267)</u>		<u>DAFSC 45271 (N=197)</u>	
		<u>NBR</u>	<u>PCT</u>	<u>NBR</u>	<u>PCT</u>
I.	ATTACK CONTROL SYSTEMS (STG112, N=230)	1	*	22	11%
II.	INSTRUMENT AND FLIGHT CONTROL SYSTEMS (STG098, N=206)	196	73%	8	4%
III.	COMMUNICATION, NAVIGATION, AND PENETRATION AIDS SYSTEMS (STG071, N=219)	1	*	14	7%
IV.	MULTI-SYSTEMS (STG116, N=155)	28	10%	49	25%
V.	AVIONIC SYSTEMS TRAINING (STG024, N=39)	14	5%	13	7%
VI.	AVIONIC SYSTEMS SUPERVISORS (STG049, N=55)	3	1%	39	20%
VII.	PREVENTIVE MAINTENANCE IJT (STG130, N=5)	0	0	3	3%
VIII.	QUALITY ASSURANCE INSPECTORS (STG079, N=8)	0	0	7	4%
IX.	DEBRIEFERS IJT (STG060, N=5)	3	1%	0	0
X.	FLIGHTLINE EXPEDITERS IJT (STG078, N=5)	0	0	4	2%
XI.	CONTROLLERS IJT (STG061, N=5)	0	0	2	1%
XII.	PREVENTIVE MAINTENANCE IJT (STG130, N=5)	0	0	3	2%
XIII.	AIRCRAFT BATTLE DAMAGE REPAIR IJT (STG092, N=5)	1	*	0	0
	NOT GROUPED (N=45)	<u>12</u>	<u>4%</u>	<u>30</u>	<u>15%</u>
	TOTAL	267	99%	197	101%

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 5C
DISTRIBUTION OF 452X1C DAFSC GROUP MEMBERS
ACROSS CAREER LADDER JOBS
(NUMBER AND PERCENT RESPONDING)

<u>CAREER LADDER JOBS</u>		<u>DAFSC 45231/51C (N=266)</u>		<u>DAFSC 45271 (N=197)</u>	
		<u>NBR</u>	<u>PCT</u>	<u>NBR</u>	<u>PCT</u>
I.	ATTACK CONTROL SYSTEMS (STG112, N=230)	1	*	22	11%
II.	INSTRUMENT AND FLIGHT CONTROL SYSTEMS (STG098, N=206)	1	*	8	4%
III.	COMMUNICATION, NAVIGATION, AND PENETRATION AIDS SYSTEMS (STG071, N=219)	203	76%	14	7%
IV.	MULTI-SYSTEMS (STG116, N=155)	28	11%	49	25%
V.	AVIONIC SYSTEMS TRAINING (STG024, N=39)	8	3%	13	7%
VI.	AVIONIC SYSTEMS SUPERVISORS (STG049, N=55)	2	1%	39	20%
VII.	LOGISTICS SUPPORT (STG044, N=37)	8	3%	6	3%
VIII.	QUALITY ASSURANCE INSPECTORS (STG079, N=8)	0	0	7	4%
IX.	DEBRIEFERS IJT (STG060, N=5)	1	*	0	0
X.	FLIGHTLINE EXPEDITERS IJT (STG078, N=5)	2	1%	4	2%
XI.	CONTROLLERS IJT (STG061, N=5)	1	*	2	1%
XII.	PREVENTIVE MAINTENANCE IJT (STG130, N=5)	1	*	3	2%
XIII.	AIRCRAFT BATTLE DAMAGE REPAIR IJT (STG092, N=5)	3	1%	0	0
	NOT GROUPED (N=45)	<u>8</u>	<u>3%</u>	<u>30</u>	<u>15%</u>
	TOTAL	266	100%	197	101%

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 6A

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY
452X1A DAFSC GROUPS

DUTIES	DAFSC 45231A (N=52)	DASFC 45251A (N=257)	DAFSC 45271 (N=197)
A ORGANIZING AND PLANNING	2	4	12
B DIRECTING AND IMPLEMENTING	1	4	14
C EVALUATING AND INSPECTING	1	3	11
D TRAINING	1	5	10
E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS	14	13	12
F PERFORMING GENERAL AIRCRAFT HANDLING TASKS	17	14	8
G PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS	25	19	10
H MAINTAINING ATTACK CONTROL SYSTEMS	38	28	8
I MAINTAINING INSTRUMENT AND FLIGHT CONTROL SYSTEMS	*	5	7
J MAINTAINING COMMUNICATIONS, NAVIGATION, AND PENETRATION AIDS SYSTEMS	1	3	7

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 6B

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY
452X1B DAFSC GROUPS

DUTIES	DAFSC 45231B (N=74)	DASFC 45251B (N=193)	DAFSC 45271 (N=197)
A ORGANIZING AND PLANNING	*	3	12
B DIRECTING AND IMPLEMENTING	1	3	14
C EVALUATING AND INSPECTING	*	3	11
D TRAINING	*	7	10
E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS	8	12	12
F PERFORMING GENERAL AIRCRAFT HANDLING TASKS	18	14	8
G PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS	14	12	10
H MAINTAINING ATTACK CONTROL SYSTEMS	2	4	8
I MAINTAINING INSTRUMENT AND FLIGHT CONTROL SYSTEMS	55	38	7
J MAINTAINING COMMUNICATIONS, NAVIGATION, AND PENETRATION AIDS SYSTEMS	1	3	7

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 6C

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY
452X1C DAFSC GROUPS

DUTIES	DAFSC 45231C (N=79)	DASFC 45251C (N=187)	DAFSC 45271 (N=197)
A ORGANIZING AND PLANNING	1	3	12
B DIRECTING AND IMPLEMENTING	*	3	14
C EVALUATING AND INSPECTING	*	3	11
D TRAINING	*	6	10
E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS	7	12	12
F PERFORMING GENERAL AIRCRAFT HANDLING TASKS	17	13	8
G PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS	21	18	10
H MAINTAINING ATTACK CONTROL SYSTEMS	1	3	8
I MAINTAINING INSTRUMENT AND FLIGHT CONTROL SYSTEMS	2	3	7
J MAINTAINING COMMUNICATIONS, NAVIGATION, AND PENETRATION AIDS SYSTEMS	50	35	7

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 7A

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 45231A AND 45251A PERSONNEL
(N=309)

TASKS	PERCENT MEMBERS PERFORMING
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	84
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	84
H301 ISOLATE MALFUNCTIONS WITHIN INERTIAL NAVIGATION SYSTEMS (INS)	84
H338 REMOVE OR INSTALL RDR SYSTEM LRUs	84
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	83
G271 INSPECT WAVEGUIDES	83
G287 REMOVE OR INSTALL WAVEGUIDES	83
H299 ISOLATE MALFUNCTIONS WITHIN HUD SYSTEMS	83
H318 PERFORM OPERATIONAL CHECKOUT AND BIT OF HUD SYSTEMS	83
H324 PERFORM OPERATIONAL CHECKOUT OF INSs	83
H329 REMOVE OR INSTALL HUD SYSTEM LINE REPLACEABLE UNITS (LRU)	83
G270 INSPECT TRIAXIAL CABLES AND CONNECTORS	82
H297 ISOLATE MALFUNCTIONS WITHIN CENTRAL COMPUTER (CC) SYSTEMS	82
H298 ISOLATE MALFUNCTIONS WITHIN FIRE CONTROL RADAR (RDR) SYSTEMS	82
H317 PERFORM OPERATIONAL CHECKOUT AND BUILT-IN TEST (BIT) OF CC SYSTEMS	82
H322 PERFORM OPERATIONAL CHECKOUT AND BIT OF RDR SYSTEMS	82
H331 REMOVE OR INSTALL INS LRUs	82
F188 CONNECT OR DISCONNECT AIRCRAFT HYDRAULIC TEST STANDS OR HYDRAULIC POWER	81
G267 INSPECT COAXIAL CABLES AND CONNECTORS	81
G269 INSPECT MULTIPIN CONNECTORS	81
H296 ISOLATE MALFUNCTIONS TO NAVIGATION CONTROL INDICATOR (NCI) PANELS	81
H302 ISOLATE MALFUNCTIONS WITHIN LEAD COMPUTING GYROS (LCG)	81
H304 ISOLATE MALFUNCTIONS WITHIN OVERLOAD WARNING SYSTEMS (OWS)	81
H320 PERFORM OPERATIONAL CHECKOUT AND BIT OF LCGs	81
H326 REMOVE OR INSTALL CC SYSTEMS	81
G278 PERFORM SAFETY WIRING	80
H332 REMOVE OR INSTALL LCGs	80
G284 REMOVE OR INSTALL MULTIPIN CONNECTORS (CANNON PLUG)	79
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	79
H315 PERFORM CHECKOUT OF NCI PANELS	79
H325 PERFORM OPERATIONAL CHECKOUT OF OWSs	79
G276 ISOLATE MALFUNCTIONS WITHIN TRIAXIAL CABLES AND CONNECTORS	78

TABLE 7B

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 45231B AND 45251B PERSONNEL
(N=267)

TASKS	PERCENT MEMBERS PERFORMING
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	86
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	85
I344 ISOLATE MALFUNCTIONS WITHIN AIR INLET CONTROL SYSTEMS (AICS)	85
I345 ISOLATE MALFUNCTIONS WITHIN ATTITUDE HEADING REFERENCE SYSTEMS (AHRS)	85
I366 PERFORM LEAK CHECKS OF PITOT STATIC SYSTEMS	85
I370 PERFORM OPERATIONAL CHECKOUT AND BIT OF AHRSs	85
I372 PERFORM OPERATIONAL CHECKOUT AND BIT OF FUEL QUANTITY INDICATING SYSTEMS	85
I375 PERFORM OPERATIONAL CHECKOUT OF AFCSs	85
F188 CONNECT OR DISCONNECT AIRCRAFT HYDRAULIC TEST STANDS OR HYDRAULIC POWER	84
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	84
I346 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC FLIGHT CONTROL SYSTEMS (AFCS)	84
I350 ISOLATE MALFUNCTIONS WITHIN FUEL FLOW INDICATING SYSTEMS	84
I351 ISOLATE MALFUNCTIONS WITHIN FUEL QUANTITY INDICATING SYSTEMS	84
I357 ISOLATE MALFUNCTIONS WITHIN PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	84
I369 PERFORM OPERATIONAL CHECKOUT AND BIT OF ADC SYSTEMS	84
I371 PERFORM OPERATIONAL CHECKOUT AND BIT OF AICSs	84
I373 PERFORM OPERATIONAL CHECKOUT AND BIT OF HSI SYSTEMS	84
I379 PERFORM OPERATIONAL CHECKOUT OF HYDRAULIC PRESSURE INDICATING SYSTEMS	84
I386 REMOVE OR INSTALL AHRS LRUs	84
I352 ISOLATE MALFUNCTIONS WITHIN HORIZONTAL SITUATION INDICATING (HSI) SYSTEMS	83
I359 ISOLATE MALFUNCTIONS WITHIN STANDBY ATTITUDE INDICATORS	83
I384 REMOVE OR INSTALL ADC SYSTEM LRUs	83
I385 REMOVE OR INSTALL AHRS LRUs	83
I387 REMOVE OR INSTALL AICS LRUs	83
I392 REMOVE OR INSTALL FUEL QUANTITY INDICATING SYSTEM LRUs	83
I393 REMOVE OR INSTALL HSI SYSTEM LRUs	83
I341 CALIBRATE FUEL QUANTITY INDICATING SYSTEMS	82
I378 PERFORM OPERATIONAL CHECKOUT OF FLIGHT CONTROL TRIM SYSTEMS	82
I381 PERFORM OPERATIONAL CHECKOUT OF PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	82

TABLE 7C

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 45231C AND 45251C PERSONNEL
(N=266)

TASKS	PERCENT MEMBERS PERFORMING
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	89
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	89
J424 PERFORM OPERATIONAL CHECKOUT AND BIT OF AAI SYSTEMS	89
J426 PERFORM OPERATIONAL CHECKOUT AND BIT OF IFF SYSTEMS	89
J432 PERFORM OPERATIONAL CHECKOUT AND BIT OF UHF COMMUNICATION AND AUDIO SIGNAL SYSTEMS	88
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	87
J412 ISOLATE MALFUNCTIONS WITHIN IDENTIFICATION FRIEND OR FOE (IFF) SYSTEMS	87
J428 PERFORM OPERATIONAL CHECKOUT AND BIT OF TACAN SYSTEMS	87
J436 REMOVE OR INSTALL AAI SYSTEM LINE REPLACEABLE UNITS (LRU)	87
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	86
J410 ISOLATE MALFUNCTIONS WITHIN AIR-TO-AIR IFF INTERROGATOR (AAI) SYSTEMS	86
J425 PERFORM OPERATIONAL CHECKOUT AND BIT OF ADF SYSTEMS	86
J433 PERFORM OPERATIONAL CHECKOUT OF ILSs	86
J439 REMOVE OR INSTALL IFF SYSTEM LRUs	86
J449 REMOVE OR INSTALL UHF COMMUNICATION AND AUDIO SIGNAL SYSTEM LRUs	86
J413 ISOLATE MALFUNCTIONS WITHIN INSTRUMENT LANDING SYSTEMS (ILS)	85
J415 ISOLATE MALFUNCTIONS WITHIN TACTICAL AIR NAVIGATION (TACAN) SYSTEMS	85
J420 ISOLATE MALFUNCTIONS WITHIN ULTRA HIGH FREQUENCY (UHF) COMMUNICATION AND AUDIO SIGNAL SYSTEMS	85
J427 PERFORM OPERATIONAL CHECKOUT AND BIT OF MODE 4 CRYPTO EQUIPMENT	85
J443 REMOVE OR INSTALL TACAN SYSTEM LRUs	85
G267 INSPECT COAXIAL CABLES AND CONNECTORS	83
J405 CODE MODE 4 CRYPTO EQUIPMENT	83
J414 ISOLATE MALFUNCTIONS WITHIN INTERFERENCE BLANKER SYSTEMS (IBS)	83
J440 REMOVE OR INSTALL ILS LRUs	83
J407 ISOLATE MALFUNCTIONS TO MODE 4 CRYPTO EQUIPMENT	82
J411 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC DIRECTION FINDER (ADF) SYSTEMS	82
J441 REMOVE OR INSTALL MODE 4 CRYPTO EQUIPMENT LRUs	82
J421 PERFORM BIT OF IBSs	81

DAFSC 45231/51A personnel perform an average of 87 tasks, with 62 tasks accounting for approximately 50 percent of their job time. Of the 309 A-shred 3- and 5-skill airmen, 206 are members of the Attack Control Systems cluster. Seventy-three percent of the 267 DAFSC 45231/51B airmen are members of the Instrument and Flight Control Systems cluster. These personnel perform an average of 113 tasks, with 43 tasks accounting for approximately 50 percent of their job time. DAFSC 45231/51C personnel perform an average of 120 tasks, with 70 tasks accounting for approximately 50 percent of their job time. Of the 266 C-shred 3- and 5-skill airmen, 203 are members of the Communication, Navigation, and Penetration Aids Systems cluster.

DAFSC 45271: The 197 7-skill level personnel (19 percent of the 452X1 survey sample) perform an average of 113 tasks. These airmen supervise an average of seven people and spend 59 percent of their time on supervisory and managerial tasks (Duties A through E). While many of the 7-skill level personnel are members of the Avionic Systems Supervisor cluster, nearly 48 percent of these highly skilled airmen are also present in the more technically oriented jobs (see Tables 5A, 5B, or 5C). Examples of tasks performed by this group include: write APRs, counsel personnel on personal or military-related matters, determine work priorities, and inspect flightline maintenance actions. A more complete listing of characteristic tasks for these incumbents can be found in Table 8.

Tasks which best distinguish the 7-skill level personnel from their junior counterparts are presented in Tables 9A, 9B, and 9C. Examples of tasks with the greatest difference in members performing include junior level personnel removing or installing OWS LRUs, isolating malfunctions within fuel flow indicating systems, and isolating malfunctions within instrument landing systems. Tasks performed by senior level NCOs include supervising Avionic Systems Technicians (AFSC 45271), writing recommendations for awards and decorations, and supervising military personnel with AFSCs other than 452X1. As expected, the key difference lies in a greater emphasis on supervisory functions for 7-skill level airmen.

Summary

Career ladder progression within the 452X1 career ladder is typical of most ladders. Both 3- and 5-skill level personnel spend the majority of their job time performing technical tasks. Individuals possessing a 7-skill level concentrate their efforts on supervisory and managerial functions, with a substantial decrease in time spent performing tasks technical in nature.

TABLE 8
REPRESENTATIVE TASKS PERFORMED BY
DAFSC 45271 PERSONNEL
(N=197)

TASKS	PERCENT MEMBERS PERFORMING
C81 WRITE APRs	73
B31 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	69
A8 DETERMINE WORK PRIORITIES	63
C76 INSPECT PERSONNEL FOR COMPLIANCE WITH MILITARY STANDARDS	63
C82 WRITE RECOMMENDATIONS FOR AWARDS AND DECORATIONS	63
D85 ANNOTATE TRAINING RECORDS	63
E138 INITIATE, ANNOTATE, OR REVIEW AIRCRAFT FLIGHT OR MAINTENANCE RECORDS, SUCH AS AFTO FORMS 781 SERIES	63
A1 ASSIGN MAINTENANCE AND REPAIR WORK	62
D103 MAINTAIN TRAINING RECORDS	62
A5 COORDINATE MAINTENANCE WORK WITH APPROPRIATE PERSONNEL OR AGENCIES	60
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	60
B46 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR	57
G269 INSPECT MULTIPIN CONNECTORS	57
G290 RESEARCH TECHNICAL ORDERS	57
C75 INSPECT FLIGHTLINE MAINTENANCE ACTIONS	56
E139 INSPECT TOOLS OR EQUIPMENT	55
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	55
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	55
A20 PLAN OR SCHEDULE WORK ASSIGNMENTS	54
D91 COUNSEL TRAINEES ON TRAINING PROGRESS	54

TABLE 9A

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 45231/51A AND DAFSC 45271 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 45231/51A (N=309)	DAFSC 45271 (N=197)	DIFFERENCE
H337 REMOVE OR INSTALL OWS LRUs	78	31	47
H336 REMOVE OR INSTALL NCI PANEL DIGITAL READOUT DISPLAY (DRD)	78	32	46
H299 ISOLATE MALFUNCTIONS WITHIN HUD SYSTEMS	83	38	45
H304 ISOLATE MALFUNCTIONS WITHIN OVERLOAD WARNING SYSTEMS (OWS)	81	36	45
H318 PERFORM OPERATIONAL CHECKOUT AND BIT OF HUD SYSTEMS	83	38	45
H320 PERFORM OPERATIONAL CHECKOUT AND BIT OF LCGs	81	36	45
H329 REMOVE OR INSTALL HUD SYSTEM LINE REPLACEABLE UNITS (LRU)	83	38	45
H332 REMOVE OR INSTALL LCGs	80	36	44
H301 ISOLATE MALFUNCTIONS WITHIN INERTIAL NAVIGATION SYSTEMS	84	40	44
C81 WRITE APRs	40	73	-33
A25 SCHEDULE PERSONNEL FOR LEAVE OR TEMPORARY DUTY (TDY)	9	43	-34
B54 SUPERVISE AVIONIC COMMUNICATION, NAVIGATION, AND PENETRATION AIDS SYSTEMS SPECIALISTS (AFSC 45231C)	12	46	-34
A16 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	18	53	-35
C76 INSPECT PERSONNEL FOR COMPLIANCE WITH MILITARY STANDARDS	28	63	-35
B46 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	21	57	-36
B31 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	32	69	-37
B56 SUPERVISE MILITARY PERSONNEL WITH AFSC OTHER THAN 452X1	14	51	-37
C87 WRITE RECOMMENDATIONS FOR AWARDS AND DECORATIONS	23	63	-40
B55 SUPERVISE AVIONIC SYSTEM TECHNICIANS (AFSC 45271)	6	49	-43

TABLE 9B

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 45231/51B AND DAFSC 45271 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 45231/51B (N=267)	DAFSC 45271 (N=197)	DIFFERENCE
I350 ISOLATE MALFUNCTIONS WITHIN FUEL FLOW INDICATING SYSTEMS	84	22	62
I344 ISOLATE MALFUNCTIONS WITHIN AIR INLET CONTROL SYSTEMS (AICS)	85	26	60
I353 ISOLATE MALFUNCTIONS WITHIN HYDRAULIC PRESSURE INDICATING SYSTEMS	84	24	60
I359 ISOLATE MALFUNCTIONS WITHIN STANDBY ATTITUDE INDICATORS	83	23	60
I362 MAINTAIN PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	81	21	60
I341 CALIBRATE FUEL QUANTITY INDICATING SYSTEMS	82	22	59
I351 ISOLATE MALFUNCTIONS WITHIN FUEL QUANTITY INDICATING SYSTEMS	84	25	59
I357 ISOLATE MALFUNCTIONS WITHIN PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	84	25	59
I371 PERFORM OPERATIONAL CHECKOUT AND BIT OF AICSS	84	25	59
I379 PERFORM OPERATIONAL CHECKOUT OF HYDRAULIC PRESSURE	84	25	59
A21 PLAN OR SCHEDULE WORK PRIORITIES	15	51	-36
A20 PLAN OR SCHEDULE WORK ASSIGNMENTS	17	54	-37
B46 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	19	57	-38
C76 INSPECT PERSONNEL FOR COMPLIANCE WITH MILITARY STANDARDS	25	63	-38
A25 SCHEDULE PERSONNEL FOR LEAVE OR TEMPORARY DUTY (TDY)	3	43	-40
B31 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	28	69	-41
C81 WRITE APRs	32	73	-41
B56 SUPERVISE MILITARY PERSONNEL WITH AFSC OTHER THAN 452X1	9	51	-42
B55 SUPERVISE AVIONIC SYSTEMS TECHNICIANS (AFSC 45271)	6	49	-43
C82 WRITE RECOMMENDATIONS FOR AWARDS AND DECORATIONS	19	63	-44

TABLE 9C

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 45231/51C AND DAFSC 45271 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 45231/51C (N=266)	DAFSC 45271 (N=197)	DIFFERENCE
J412 ISOLATE MALFUNCTIONS WITHIN IDENTIFICATION FRIEND OR FOE (IFF) SYSTEMS	87	31	56
J413 ISOLATE MALFUNCTIONS WITHIN INSTRUMENT LANDING SYSTEMS (ILS)	85	29	56
J411 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC DIRECTION FINDER (ADF) SYSTEMS	82	28	54
J415 ISOLATE MALFUNCTIONS WITHIN TACTICAL AIR NAVIGATION (TACAN) SYSTEMS	85	31	54
J420 ISOLATE MALFUNCTIONS WITHIN ULTRA HIGH FREQUENCY (UHF) COMMUNICATION AND AUDIO SIGNAL SYSTEMS	85	31	54
J433 PERFORM OPERATIONAL CHECKOUT OF ILSs	86	32	54
J443 REMOVE OR INSTALL TACAN SYSTEM LRUs	85	31	54
J410 ISOLATE MALFUNCTIONS WITHIN AIR-TO-AIR IFF INTERROGATOR (AAI) SYSTEMS	86	33	53
J425 PERFORM OPERATIONAL CHECKOUT AND BIT OF ADF SYSTEMS	86	33	53
J449 REMOVE OR INSTALL UHF COMMUNICATION AND AUDIO SIGNAL SYSTEM LRUs	86	33	53
B49 SUPERVISE APPRENTICE AVIONIC ATTACK CONTROL SYSTEMS SPECIALISTS (AFSC 45231A)	5	43	-38
B52 SUPERVISE AVIONIC INSTRUMENT AND FLIGHT CONTROL SYSTEMS SPECIALISTS (AFSC 45251B)	4	42	-38
A20 PLAN OR SCHEDULE WORK ASSIGNMENTS	15	54	-39
B31 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	30	69	-39
C76 INSPECT PERSONNEL FOR COMPLIANCE WITH MILITARY STANDARDS	24	63	-39
B46 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	16	57	-41
B56 SUPERVISE MILITARY PERSONNEL WITH AFSC OTHER THAN 452X1	9	51	-42
B50 SUPERVISE AVIONIC ATTACK CONTROL SYSTEMS SPECIALISTS (AFSC 45251A)	4	47	-43
B55 SUPERVISE AVIONIC SYSTEM TECHNICIANS (AFSC 45271)	6	49	-43
C82 WRITE RECOMMENDATIONS FOR AWARDS AND DECORATIONS	20	63	-43

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

The results of the skill level and job structure analysis were compared with the AFR 39-1 Specialty Descriptions, dated 1 February 1988, for the F-15 Avionic Systems specialty. The descriptions in AFR 39-1 describe in broad terms the tasks and duties performed by members of the various skill-level groups of a career ladder.

These broad descriptions for 452X1 personnel are well supported by the findings of this survey. The descriptions depict the technical aspects of the job, as well as the major jobs identified in the work structure analysis.

TRAINING ANALYSIS

Occupational survey data provide one of several sources of information which can be used to make training programs more relevant and meaningful to students. The three most commonly used types of occupational survey information are: (1) the percent of first-enlistment personnel performing tasks covered in the job inventory, (2) ratings of relative difficulty of tasks, and (3) the ratings of relative emphasis which should be placed on tasks for first-enlistment training. These data can be used in evaluating training documents, such as the Specialty Training Standard (STS) and the Plan of Instruction (POI).

To aid in the evaluation of the 452X1 A/B/C specialty training documents, personnel at the 3450th Technical Training Group and the 532d Field Training Detachment for F-15 Avionic Systems matched nonmanagerial job inventory tasks to appropriate sections of the Specialty Training Standard (STS), Plans of Instruction (POIs), and Course Training Standards (CTSs). With these matchings, comparisons of survey data to the training documents were accomplished. A complete computer listing displaying percent members performing tasks, training emphasis, and task difficulty ratings for each task, along with STS, POIs, and CTSs matchings, has been forwarded to the technical school for its use in further detailed reviews of training documents. The AFSC 452X1 Training Requirements Analysis (TRA), scheduled for publication in May 1990, will also be made available to the technical school to assist in the evaluation of the training documents.

Training Emphasis and Task Difficulty

Training emphasis (TE) and task difficulty (TD) ratings are factors that can assist technical school personnel in deciding what tasks should be emphasized in entry-level training. TE ratings provided by career ladder subject-matter experts yielded an average rating of 2.92, with a standard deviation of 1.99. Therefore, tasks having a rating of 4.91 (average TE + 1 standard deviation) or better are considered highly recommended for structured training. TD ratings were adjusted to an average of 5.00 and a standard deviation

of 1.00. Tasks with ratings of 3.00 or better are perceived as difficult enough to warrant centralized training. For a complete discussion of TE and TD, please refer back to the Task Factor Administration section of this report.

Tasks having the highest TE ratings are listed in Tables 10 and 11. Table 10 includes, for each task, the percentage of total first-job and first-enlistment personnel performing and the TD rating. Included in Table 11 are the percent of A-, B-, and C-shred first-enlistment personnel performing each task and the TD ratings. As illustrated in Tables 10 and 11, these tasks pertain to a variety of technical functions within the specialty. A majority of these tasks fall into the performing general avionics maintenance category, with others relating to maintaining the three types of F-15 avionics systems. In addition, several of these tasks are performed by substantial percentages of first-enlistment personnel and have average to high TD ratings.

Table 12 lists the tasks having high TD ratings. The percentage of total first-enlistment, 5-, and 7-skill level personnel performing and the TE rating are also included for each task. Most of these tasks relate to supervisory functions or performing boresight alignments. These tasks are not performed by many airmen and have low TE ratings.

While reviewing this section of the report, note that tasks performed by moderate to high percentages of personnel (30 percent or better) in the first-enlistment group may justify resident technical training. TE and TD ratings, composed of the opinions of experienced career ladder personnel, are secondary factors that may assist training developers in deciding which tasks should be emphasized for entry-level training. Those tasks receiving high task factor ratings, but performed by low percentages of first-enlistment personnel, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best left out of training for new personnel. Training decisions are not only weighed against these factors, but should be influenced by many other considerations including command concerns, safety standards, and criticality of the tasks.

Analysis of First-Enlistment Personnel

In this study, there are 387 airmen in their first enlistment, representing 37 percent of all 452X1 personnel. These airmen are qualified at either the 3- or 5-skill level. Figure 3 reflects the distribution of these first-enlistment airmen across career ladder jobs. As shown in Figure 3, most of the first-enlistment members are located in three major jobs, Attack Control Systems, Instrument and Flight Control Systems, and Communication, Navigation, and Penetration Aids Systems, accounting for 92 percent of all 1-48 months TAFMS respondents. Other job groups with first-enlistment personnel include the Logistics Support cluster (4 percent) and the Debriefers IJT (1 percent).

Table 13A presents a list of representative tasks performed by the 452X1A first-termers. The 125 A-shred first-enlistment personnel perform an average of 85 tasks. Most of the tasks pertain to maintaining attack control systems.

TABLE 10

TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)
FOR 452X1 A/B/C PERSONNEL
(GREATER THAN 1 STANDARD DEVIATION ABOVE THE AVERAGE)

TASKS	TNG EMPH*	PERCENT MEMBERS PERFORMING			TASK DIFF**
		TOTAL 1ST JOB (N=178)	TOTAL 1ST ENL (N=387)		
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	6.98	88	85		6.15
G288 REPAIR AIRCRAFT WIRING	6.97	74	78		6.43
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	6.76	89	88		4.24
G272 ISOLATE MALFUNCTIONS WITHIN AIRCRAFT WIRING	6.60	77	80		6.94
G290 RESEARCH TECHNICAL ORDERS	6.23	65	65		5.49
G275 ISOLATE MALFUNCTIONS WITHIN MULTIPIN CONNECTORS	6.21	68	72		6.50
H298 ISOLATE MALFUNCTIONS WITHIN FIRE CONTROL RADAR (RDR) SYSTEMS	6.21	21	28		6.40
F188 CONNECT OR DISCONNECT AIRCRAFT HYDRAULIC TEST STANDS OR HYDRAULIC POWER	6.16	69	74		4.18
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	6.15	91	90		2.78
H301 ISOLATE MALFUNCTIONS WITHIN INERTIAL NAVIGATION SYSTEMS (INS)	6.08	25	32		5.22
H322 PERFORM OPERATIONAL CHECKOUT AND BIT OF RDR SYSTEMS	6.06	24	31		5.00
G273 ISOLATE MALFUNCTIONS WITHIN COAXIAL CABLES AND CONNECTORS	6.02	60	59		6.85
G284 REMOVE OR INSTALL MULTIPIN CONNECTORS (CANNON PLUG)	6.00	71	76		6.03
G265 INSPECT AIRCRAFT WIRING	5.92	93	90		2.97
H324 PERFORM OPERATIONAL CHECKOUT OF INSs	5.92	75	76		5.05
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	5.92	25	32		4.69
G269 INSPECT MULTIPIN CONNECTORS	5.89	72	76		4.76
H297 ISOLATE MALFUNCTIONS WITHIN CENTRAL COMPUTER (CC) SYSTEMS	5.87	27	33		5.60
H299 ISOLATE MALFUNCTIONS WITHIN HUD SYSTEMS	5.82	24	31		5.35
G289 REPAIR CHAFED AREAS	5.81	52	61		5.78
H300 ISOLATE MALFUNCTIONS WITHIN INDICATOR GROUP (IG) SYSTEMS	5.81	24	29		5.30
H304 ISOLATE MALFUNCTIONS WITHIN OVERLOAD WARNING SYSTEMS (OWS)	5.76	22	29		5.96
I346 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC FLIGHT CONTROL SYSTEMS (AFCS)	5.76	31	31		6.88
J410 ISOLATE MALFUNCTIONS WITHIN AIR-TO-AIR IFF INTERROGATOR (AAI) SYSTEMS	5.73	44	34		5.91
H325 PERFORM OPERATIONAL CHECKOUT OF OWSs	5.71	21	27		4.95
F190 ELECTRICALLY GROUND AIRCRAFT	5.69	66	72		1.78

* Average Training Emphasis = 2.92 with SD of 1.99 (High = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 11

TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)
FOR 452X1A, 452X1B, AND 452X1C PERSONNEL
(GREATER THAN 1 STANDARD DEVIATION ABOVE THE AVERAGE)

TASKS	TNG EMPH*	PERCENT MEMBERS PERFORMING			TASK DIFF**
		452X1A 1ST ENL (N=125)	452X1B 1ST ENL (N=130)	452X1C 1ST ENL (N=131)	
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	6.98	79	85	89	6.15
G288 REPAIR AIRCRAFT WIRING	6.97	74	82	77	6.43
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	6.76	88	88	89	4.24
G272 ISOLATE MALFUNCTIONS WITHIN AIRCRAFT WIRING	6.60	79	81	80	6.94
G290 RESEARCH TECHNICAL ORDERS	6.23	69	58	69	5.49
G275 ISOLATE MALFUNCTIONS WITHIN MULTIPIN CONNECTORS	6.21	79	63	73	6.50
H298 ISOLATE MALFUNCTIONS WITHIN FIRE CONTROL RADAR (RDR) SYSTEMS	6.21	84	0	2	6.40
F188 CONNECT OR DISCONNECT AIRCRAFT HYDRAULIC TEST STANDS OR HYDRAULIC POWER	6.16	84	87	51	4.18
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	6.15	88	89	92	2.78
H301 ISOLATE MALFUNCTIONS WITHIN INERTIAL NAVIGATION SYSTEMS (INS)	6.08	89	7	1	5.22
H322 PERFORM OPERATIONAL CHECKOUT AND BIT OF RDR SYSTEMS	6.06	87	4	3	5.00
G273 ISOLATE MALFUNCTIONS WITHIN COAXIAL CABLES AND CONNECTORS	6.02	80	19	79	6.85
G284 REMOVE OR INSTALL MULTIPIN CONNECTORS (CANNON PLUG)	6.00	82	73	73	6.03
G265 INSPECT AIRCRAFT WIRING	5.92	87	89	93	2.97
H324 PERFORM OPERATIONAL CHECKOUT OF INS	5.92	78	76	75	5.05
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	5.92	86	8	2	4.69
G269 INSPECT MULTIPIN CONNECTORS	5.89	84	65	79	4.76
H297 ISOLATE MALFUNCTIONS WITHIN CENTRAL COMPUTER (CC) SYSTEMS	5.87	86	5	8	5.60
H299 ISOLATE MALFUNCTIONS WITHIN HUD SYSTEMS	5.82	88	2	5	5.35

* Average Training Emphasis = 2.92 with SD of 1.99 (High = 4.91)
** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 11 (CONTINUED)

TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)
FOR 452X1A, 452X1B, AND 452X1C PERSONNEL
(GREATER THAN 1 STANDARD DEVIATION ABOVE THE AVERAGE)

TASKS	TNG EMPH*	PERCENT MEMBERS PERFORMING			TASK DIFF**
		452X1A 1ST ENL (N=125)	452X1B 1ST ENL (N=130)	452X1C 1ST ENL (N=131)	
G289 REPAIR CHAFED AREAS	5.81	66	60	56	5.78
H300 ISOLATE MALFUNCTIONS WITHIN INDICATOR GROUP (IG) SYSTEMS	5.81	74	15	2	5.30
H304 ISOLATE MALFUNCTIONS WITHIN OVERLOAD WARNING SYSTEMS (OWS)	5.76	85	4	1	5.96
I346 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC FLIGHT CONTROL SYSTEMS (AFCS)	5.76	2	91	1	6.88
J410 ISOLATE MALFUNCTIONS WITHIN AIR-TO-AIR IFF INTERROGATOR (AAI) SYSTEMS	5.73	6	2	94	5.91
H325 PERFORM OPERATIONAL CHECKOUT OF OWSs	5.71	82	2	1	4.95
F190 ELECTRICALLY GROUND AIRCRAFT	5.69	74	75	69	1.78

* Average Training Emphasis = 2.92 with SD of 1.99 (High = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 12

TASKS RATED HIGHEST IN TASK DIFFICULTY (TD)
FOR 452X1 A/B/C PERSONNEL
(GREATER THAN 1 STANDARD DEVIATION ABOVE THE AVERAGE)

TASKS	TASK DIFF*	PERCENT MEMBERS PERFORMING			TNG EMPH**
		TOTAL 1ST ENL (N=387)	TOTAL 45251 (N=637)	45271 (N=197)	
A14	7.55	1	1	5	.24
C83	7.37	0	1	12	.35
D93	7.25	5	2	2	.66
H312	7.25	11	17	17	3.02
H313	7.25	11	17	16	3.03
H314	7.22	10	15	14	2.97
A9	7.11	1	3	11	.50
C82	7.11	2	27	63	2.11
A15	7.08	1	3	16	.23
C59	6.92	8	12	9	3.11
I365	6.92	1	1	5	.13
G276					
	6.90	47	56	41	5.48
C60	6.88	6	10	23	1.06
D94	6.84	1	4	9	.60
C77	6.84	1	2	14	.53
C61	6.76	4	6	17	.84
A13	6.75	2	8	32	.89
D96	6.73	1	4	6	.34
H307	6.69	15	23	20	3.18
H308	6.69	14	21	18	3.24

* Average Task Difficulty = 5.00 with SD of 1.00

** Average Training Emphasis = 2.92 with SD of 1.99 (High = 4.91)

DISTRIBUTION OF 452X1A/B/C FIRST-ENLISTMENT PERSONNEL ACROSS SPECIALTY JOB GROUPS

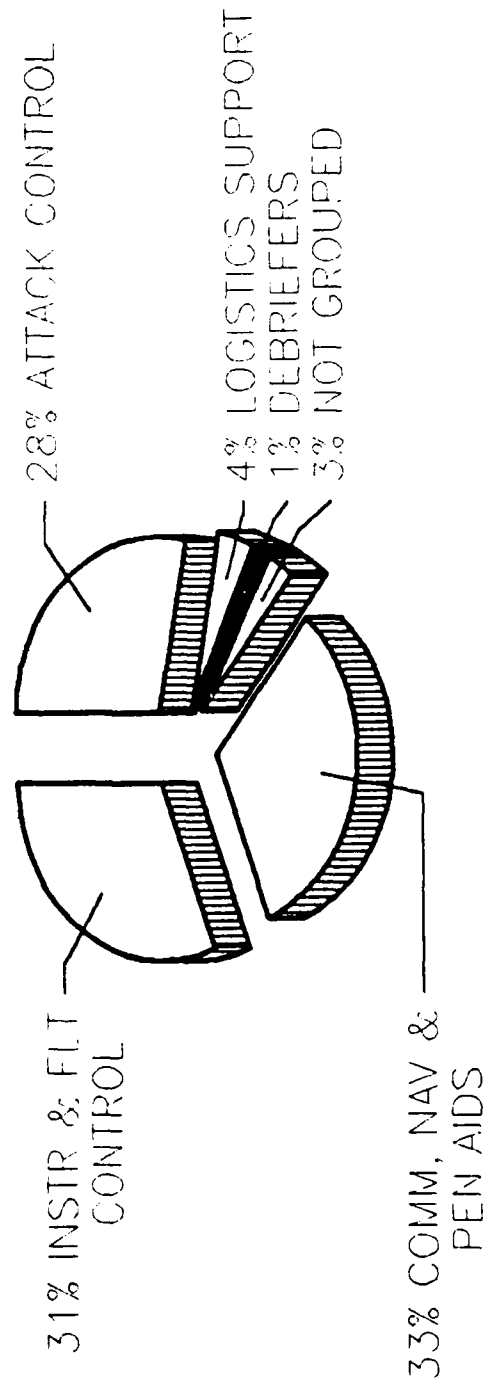


FIGURE 3

TABLE 13A

REPRESENTATIVE TASKS PERFORMED BY AFSC 452X1A
FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS	PERCENT MEMBERS PERFORMING (N=125)
G287 REMOVE OR INSTALL WAVEGUIDES	89
H301 ISOLATE MALFUNCTIONS WITHIN INERTIAL NAVIGATION SYSTEMS (INS)	89
H338 REMOVE OR INSTALL RDR SYSTEM LRUs	89
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	88
G271 INSPECT WAVEGUIDES	88
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	88
H299 ISOLATE MALFUNCTIONS WITHIN HUD SYSTEMS	88
H329 REMOVE OR INSTALL HUD SYSTEM LINE REPLACEABLE UNITS (LRU)	88
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	87
H322 PERFORM OPERATIONAL CHECKOUT AND BIT OF RDR SYSTEMS	87
H332 REMOVE OR INSTALL LCGs	87
H297 ISOLATE MALFUNCTIONS WITHIN CENTRAL COMPUTER (CC) SYSTEMS	86
H318 PERFORM OPERATIONAL CHECKOUT AND BIT OF HUD SYSTEMS	86
H324 PERFORM OPERATIONAL CHECKOUT OF INSs	86
H331 REMOVE OR INSTALL INS LRUs	86
H296 ISOLATE MALFUNCTIONS TO NAVIGATION CONTROL INDICATOR (NCI) PANELS	85
H317 PERFORM OPERATIONAL CHECKOUT AND BUILT-IN TEST (BIT) OF CC SYSTEMS	85
H326 REMOVE OR INSTALL CC SYSTEMS	85
F188 CONNECT OR DISCONNECT AIRCRAFT HYDRAULIC TEST STANDS OR HYDRAULIC POWER	84
G269 INSPECT MULTIPIN CONNECTORS	84
G270 INSPECT TRIAXIAL CABLES AND CONNECTORS	84
H298 ISOLATE MALFUNCTIONS WITHIN FIRE CONTROL RADAR (RDR) SYSTEMS	84
G267 INSPECT COAXIAL CABLES AND CONNECTORS	82
G278 PERFORM SAFETY WIRING	82
H315 PERFORM CHECKOUT OF NCI PANELS	82
E130 INITIATE AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG)	78
E141 INVENTORY TOOLS, SUCH AS CONSOLIDATED TOOL KITS (CTK)	62
E138 INITIATE, ANNOTATE, OR REVIEW AIRCRAFT FLIGHT OR MAINTENANCE RECORDS, SUCH AS AFTO FORMS 781 SERIES	60
E139 INSPECT TOOLS OR EQUIPMENT	59

The 130 B-shred first-enlistment personnel perform an average of 102 tasks. Table 13B displays representative tasks performed by the B-shred first-enlistment specialists. As expected, most of these tasks relate to maintaining instrument and flight control systems. The 131 C-shred first-enlistment personnel perform an average of 86 tasks. Table 13C presents a list of representative tasks performed by these C-shred first-enlistment personnel. Again, as expected, most of these tasks pertain to maintaining communications, navigation, and penetration aids systems.

The highly technical nature of the jobs performed by junior airmen is revealed by the fact that less than 5 percent of their job time involves supervisory or managerial functions, such as those in duties A, B, C, or D (see Table 14). These airmen spend the largest portion of their time performing the technical duties associated with their respective shred designation.

Further indication of the technical orientation of these airmen is the variety and number of equipment and test equipment worked on or utilized by first-enlistment personnel. While many pieces of equipment are also worked on by substantial percentages of other experience level groups, some items are principally maintained by members having the higher experience levels. These include aircraft jacks, aircraft radios, air compressors, and maintenance stands. Tables 15A, 15B, and 15C list equipment items worked on by 30 percent or more of the A-, B-, and C-shred first-enlistment and 45251A-; 45251B-; 45251C, or 7-skill level personnel. Similarly, test equipment used or operated by these airmen is listed in Tables 16A, 16B, and 16C. Examples of test equipment utilized by 452X1 personnel include analog multimeters, digital multimeters, HT-900 heat guns, and TTU-205 C/E. A full computer listing of all equipment items and the associated percent members performing is supplied in the Training Extracts and should be used by training specialists to determine which types of equipment should be emphasized for first-term training.

Review of Specialty Training Standard

A comprehensive review of STS 452X1, F-15 Avionic Systems Specialist and Technician specialty, dated May 1987 (with Change 1, May 1988, and Change 2, March 1989), is made by comparing STS elements to survey data. STS elements with performance elements are reviewed in terms of training emphasis, task difficulty, and percent members performing information as stipulated in ATCR 52-22, dated 17 February 1989. STS elements containing general career ladder knowledge and information are not reviewed. Typically, tasks performed by 20 percent or more of personnel in appropriate experience or skill level groups, such as first-enlistment (1-48 months TAFMS), and 5- and 7-skill level groups, should be considered for inclusion in the STS. Likewise, tasks with less than 20 percent performing in any of these groups should be considered for deletion from the STS.

Overall, survey data support the STS. All matched performance items in the STS are supported by survey data. Specifically, all of the 44 matched elements have tasks performed by greater than 20 percent of the appropriate first-enlistment, 5-, or 7-skill level respondents.

TABLE 13B

REPRESENTATIVE TASKS PERFORMED BY AFSC 452X1B
FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS	PERCENT MEMBERS PERFORMING (N=130)
I344 ISOLATE MALFUNCTIONS WITHIN AIR INLET CONTROL SYSTEMS (AICS)	92
I386 REMOVE OR INSTALL AHRS LRUs	92
I345 ISOLATE MALFUNCTIONS WITHIN ATTITUDE HEADING REFERENCE SYSTEMS (AHRS)	91
I346 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC FLIGHT CONTROL SYSTEMS (AFCS)	91
I351 ISOLATE MALFUNCTIONS WITHIN FUEL QUANTITY INDICATING SYSTEMS	91
I370 PERFORM OPERATIONAL CHECKOUT AND BIT OF AHRSs	91
I357 ISOLATE MALFUNCTIONS WITHIN PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	90
I366 PERFORM LEAK CHECKS OF PITOT STATIC SYSTEMS	90
I372 PERFORM OPERATIONAL CHECKOUT AND BIT OF FUEL QUANTITY INDICATING SYSTEMS	90
I373 PERFORM OPERATIONAL CHECKOUT AND BIT OF HSI SYSTEMS	90
I385 REMOVE OR INSTALL AFCS LRUs	90
I393 REMOVE OR INSTALL HSI SYSTEM LRUs	90
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	89
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	89
I352 ISOLATE MALFUNCTIONS WITHIN HORIZONTAL SITUATION INDICATING (HSI) SYSTEMS	89
I371 PERFORM OPERATIONAL CHECKOUT AND BIT OF AICSs	89
I375 PERFORM OPERATIONAL CHECKOUT OF AFCSs	89
I381 PERFORM OPERATIONAL CHECKOUT OF PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	89
I387 REMOVE OR INSTALL AICS LRUs	89
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	88
F188 CONNECT OR DISCONNECT AIRCRAFT HYDRAULIC TEST STANDS OR HYDRAULIC POWER	87
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	85
I353 ISOLATE MALFUNCTIONS WITHIN HYDRAULIC PRESSURE INDICATING SYSTEMS	89
I371 PERFORM OPERATIONAL CHECKOUT AND BIT OF AICSs	89
I381 PERFORM OPERATIONAL CHECKOUT OF PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	89
I341 CALIBRATE FUEL QUANTITY INDICATING SYSTEMS	88
I369 PERFORM OPERATIONAL CHECKOUT AND BIT OF ADC SYSTEMS	88
I384 REMOVE OR INSTALL ADC SYSTEM LRUs	88
I392 REMOVE OR INSTALL FUEL QUANTITY INDICATING SYSTEM LRUs	88

TABLE 13C

REPRESENTATIVE TASKS PERFORMED BY AFSC 452X1C
FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS	PERCENT MEMBERS PERFORMING (N=131)
J424 PERFORM OPERATIONAL CHECKOUT AND BIT OF AAI SYSTEMS	96
J412 ISOLATE MALFUNCTIONS WITHIN IDENTIFICATION FRIEND OR FOE (IFF) SYSTEMS	95
J426 PERFORM OPERATIONAL CHECKOUT AND BIT OF IFF SYSTEMS	95
J436 REMOVE OR INSTALL AAI SYSTEM LINE REPLACEABLE UNITS (LRU)	95
J439 REMOVE OR INSTALL IFF SYSTEM LRUs	95
J405 CODE MODE 4 CRYPTO EQUIPMENT	94
J410 ISOLATE MALFUNCTIONS WITHIN AIR-TO-AIR IFF INTERROGATOR (AAI) SYSTEMS	94
F186 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL COOLING AIR UNITS	93
J428 PERFORM OPERATIONAL CHECKOUT AND BIT OF TACAN SYSTEMS	93
J432 PERFORM OPERATIONAL CHECKOUT AND BIT OF UHF COMMUNICATION AND AUDIO SIGNAL SYSTEMS	93
J449 REMOVE OR INSTALL UHF COMMUNICATION AND AUDIO SIGNAL SYSTEM LRUs	93
F187 CONNECT OR DISCONNECT AIRCRAFT EXTERNAL POWER	92
J420 ISOLATE MALFUNCTIONS WITHIN ULTRA HIGH FREQUENCY (UHF) COMMUNICATION AND AUDIO SIGNAL SYSTEMS	92
J427 PERFORM OPERATIONAL CHECKOUT AND BIT OF MODE 4 CRYPTO EQUIPMENT	92
J441 REMOVE OR INSTALL MODE 4 CRYPTO EQUIPMENT LRUs	92
J443 REMOVE OR INSTALL TACAN SYSTEM LRUs	92
J407 ISOLATE MALFUNCTIONS TO MODE 4 CRYPTO EQUIPMENT	91
J415 ISOLATE MALFUNCTIONS WITHIN TACTICAL AIR NAVIGATION (TACAN) SYSTEMS	91
F261 WALK WINGS OR TAILS DURING AIRCRAFT TOWING OPERATIONS	89
G263 ANALYZE AVIONICS STATUS PANEL (ASP) LATCH DATA	88
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	86
J448 REMOVE OR INSTALL TEWS RWR LRUs	86
G278 PERFORM SAFETY WIRING	84
J431 PERFORM OPERATIONAL CHECKOUT AND BIT OF TEWS RWRs	83
J409 ISOLATE MALFUNCTIONS TO TACTICAL ELECTRONIC WARFARE SYSTEM (TEWS) RADAR WARNING RECEIVERS (RWR)	82
J409	82
J406 CODE SECURE VOICE CRYPTO EQUIPMENT	79
J430 PERFORM OPERATIONAL CHECKOUT AND BIT OF TEWS ICMSS	77
J419 ISOLATE MALFUNCTIONS WITHIN TEWS INTERNAL COUNTERMEASURES SYSTEMS (ICMS)	76
J447 REMOVE OR INSTALL TEWS ICMS LRUs	76
E130 INITIATE AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG)	71
F232 POSITION OR REMOVE AIRCRAFT CHOCKS OR SAFETY PINS	71

TABLE 14

PERCENT TIME SPENT ON DUTIES
BY AFSC 452X1 A/B/C FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

DUTIES	PERCENT TIME SPENT		
	452X1A 1ST ENL (N=125)	452X1B 1ST ENL (N=130)	452X1C 1ST ENL (N=131)
A ORGANIZING AND PLANNING	2	1	1
B DIRECTING AND IMPLEMENTING	1	1	1
C EVALUATING AND INSPECTING	1	1	1
D TRAINING	1	1	1
E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS	16	11	9
F PERFORMING GENERAL AIRCRAFT HANDLING TASKS	17	18	15
G PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS	24	14	20
H MAINTAINING ATTACK CONTROL SYSTEMS	37	2	1
I MAINTAINING INSTRUMENT AND FLIGHT CONTROL SYSTEMS	1	51	2
J MAINTAINING COMMUNICATIONS, NAVIGATION, AND PENETRATION AIDS SYSTEMS	1	1	49

NOTE: Columns may not add to 100 percent due to rounding

TABLE 15A

EQUIPMENT USED OR OPERATED
BY GREATER THAN 30 PERCENT OF AFSC 452X1A PERSONNEL

<u>EQUIPMENT</u>	<u>PERCENT MEMBERS PERFORMING</u>		
	452X1A 1ST ENL (N=125)	DAFSC 45251A (N=257)	DAFSC 45271 (N=197)
Aircraft Canopy System	46	53	39
Aircraft Interphone	47	63	53
Aircraft Jack	15	36	25
Aircraft Radio	14	35	42
Aircraft Seat Adjustment System	46	55	38
External Cooling Air Unit	85	82	59
External Electrical Power Unit	87	82	57
Hydraulic Servicing Cart	41	44	35
Hydraulic Test Stand	62	70	52
Maintenance Crane	79	78	39
Maintenance Stand	78	77	55
Nitrogen Servicing Cart	40	50	33
Portable Hydraulic Test Stand	78	78	44
Portable Lighting Equipment	74	71	45

TABLE 15B

EQUIPMENT USED OR OPERATED
BY GREATER THAN 30 PERCENT OF AFSC 452X1B PERSONNEL

<u>EQUIPMENT</u>	<u>PERCENT MEMBERS PERFORMING</u>		
	<u>452X1B 1ST ENL (N=130)</u>	<u>DAFSC 45251B (N=193)</u>	<u>DAFSC 45271 (N=197)</u>
Air Compressor	18	40	25
Aircraft Canopy System	63	63	39
Aircraft Interphone	68	69	53
Aircraft Jack	36	43	25
Aircraft Radio	14	35	42
Aircraft Seat Adjustment System	59	60	38
External Cooling Air Unit	91	84	59
External Electrical Power Unit	91	85	57
Ground Hearer and Blower	33	40	27
Hydraulic Servicing Cart	60	62	35
Hydraulic Test Stand	91	85	52
Maintenance Crane	20	33	39
Maintenance Stand	77	78	55
Portable Hydraulic Test Stand	45	51	44
Portable Lighting Equipment	71	68	45

TABLE 15C
EQUIPMENT USED OR OPERATED
BY GREATER THAN 30 PERCENT OF AFSC 452X1C PERSONNEL

<u>EQUIPMENT</u>	<u>PERCENT MEMBERS PERFORMING</u>		
	<u>452X1C</u> <u>1ST ENL</u> <u>(N=131)</u>	<u>DAFSC</u> <u>45251C</u> <u>(N=187)</u>	<u>DAFSC</u> <u>45271</u> <u>(N=197)</u>
Air Compressor	22	32	25
Aircraft Canopy System	58	55	39
Aircraft Interphone	81	75	53
Aircraft Radio	95	84	42
Aircraft Seat Adjustment System	44	47	38
Bomb Lift	23	37	17
External Cooling Air Unit	95	85	59
External Electrical Power Unit	95	86	57
Maintenance Stand	86	75	55
Portable Hydraulic Test Stand	40	52	44
Portable Lighting Equipment	74	72	45

TABLE 16A

TEST EQUIPMENT WORKED ON
BY GREATER THAN 30 PERCENT OF AFSC 452X1A PERSONNEL

<u>TEST EQUIPMENT</u>	<u>PERCENT MEMBERS PERFORMING</u>		
	<u>452X1A 1ST ENL (N=125)</u>	<u>DAFSC 45251A (N=257)</u>	<u>DAFSC 45271 (N=197)</u>
Automatic Flight Control Systems	3	30	31
Boresight	50	48	21
Box, WOW/Proximity	71	72	46
Generator, High PRF Target	43	50	17
Generator, Radar Target	39	35	11
Heat Gun, HT-900	53	58	42
Memory Loader Verifier (MLV)	77	31	43
Multimeter, Analog	69	71	51
Multimeter, Digital	86	84	55
Reflectometer (TDR)	24	35	31
Tester, AZ/EL Diode	22	30	15
Tester, Radio Frequency (RF)	52	46	23
Tester, Waveguide Pressure	75	74	39
TTU-205 C/E	36	50	44

TABLE 16B
TEST EQUIPMENT WORKED ON
BY GREATER THAN 30 PERCENT OF AFSC 452X1B PERSONNEL

<u>TEST EQUIPMENT</u>	<u>PERCENT MEMBERS PERFORMING</u>		
	<u>52X1B 1ST ENL (N=130)</u>	<u>DAFSC 45251B (N=193)</u>	<u>DAFSC 45271 (N=197)</u>
Angle-of-Attack Probe Torque Tester	54	61	16
Automatic Flight Control Systems	92	83	31
Box, Breakout	48	65	18
Box, WOW/Proximity	88	84	46
Calibrator, Compass	66	73	25
Calibrator, Standby Compass	62	60	18
CAS Shutdown Inhibit Cable Assembly	37	33	12
Heat Gun, HT-900	65	69	42
Hydrometer	79	80	24
Inflight Monitor	71	75	22
Linear Gauge (Pogo Stick)	52	60	17
Multimeter, Analog	86	78	51
Multimeter, Digital	94	86	55
Ramp Test Plug	63	70	14
Test Set, Fuel Quantity Gauging	80	80	23
Tester, Fuel Quantity	70	66	20
Torque Strap Adapter	35	39	19
TTU-205 C/E	90	82	44

TABLE 16C

TEST EQUIPMENT WORKED ON
BY GREATER THAN 30 PERCENT OF AFSC 452X1C PERSONNEL

TEST EQUIPMENT	PERCENT MEMBERS PERFORMING		
	452X1C 1ST ENL (N=131)	DAFSC 45251C (N=187)	DAFSC 45271 (N=197)
Box, WOW/Proximity	69	72	46
Heat Gun, HT-900	47	56	42
Improved Radar Simulator (AN/APM-427)	43	60	22
Memory Loader Verifier (MLV)	70	71	43
Multimeter, Analog	78	77	51
Multimeter, Digital	92	86	55
Reflectometer (TDR)	31	40	31
Test Set, Air-to-Air IFF Interrogator	92	81	32
Tester Set, IFF Transponder (AN/ASM-424)	96	88	36
Test Set, Instrument Landing System	85	85	34
Tester, Radio Frequency (RF)	44	40	23
Tester, WATTS	73	68	24
Tester, Waveguide Pressure	69	66	39
Thru-Line WATT Meter	53	60	24
TTU-205 C/E	28	33	44

Further analysis of the STS found 150 tasks not referenced to the STS, with 40 pertaining to technical functions. Examples of technically oriented tasks performed by greater than 20 percent of 452X1 A/B/C airmen and not referenced to the STS are listed in Table 17. Some of these tasks related to general avionic systems maintenance functions, such as inspecting electrical relays and removing or installing coaxial cables and connectors. Usually, such tasks not referenced should be covered by some existing element, or a new item could be added to the STS. Training personnel should carefully review the list of "Tasks Not Referenced," located at the end of the STS computer printout in the TRAINING EXTRACT, to determine areas which might be appropriate for inclusion in future revisions of the STS.

Review of Plan of Instruction (POI)

Based on assistance from technical school subject-matter experts in matching job inventory tasks to POI G3AIQR45231A-000, POI G3AIQR45231B-000, and POI G3AIQR45231C-000, dated June 1989, occupational survey data were matched to related training objectives. A similar method to that of the STS analysis was employed to review the Phase I POIs. The specific data examined included percent members performing data for first-enlistment (1-48 months TAFMS) personnel, training emphasis (TE), and task difficulty (TD) ratings.

Guidelines outlined in ATCR 52-22 state that a POI objective is supported for training if 30 percent or more of all first-enlistment personnel perform related tasks. Due to the nature of this specialty, with separate and unique training for each avionic system, a POI objective is also considered supported if 30 percent or more of A-, B-, or C-shred first-enlistment personnel perform a related task. Analysis of the survey data indicates that the three POIs are supported.

POI G3AIQR45231A: This Phase I POI had 21 objectives matched to task items, and all were supported. In other words, all matched knowledge and performance level objectives had 30 percent or more of AFSC 45231A first-enlistment personnel performing related tasks. These objectives cover 79.75 of 211.5 classroom course hours.

Seventy-nine tasks performed by 30 percent or more A-shred first-enlistment personnel were not matched with POI objectives. Tasks relating to attack control systems and general avionic systems maintenance account for the majority of unreferenced tasks. In addition to high levels of performance, several of these tasks are rated high in terms of TE and TD. Examples of these tasks with survey data are listed in Table 18A.

POI G3AIQR45231B: This B-shred POI had 34 objectives matched to task items, and all were supported. All matched knowledge and performance level objectives had 30 percent or more of AFSC 45231B first-enlistment personnel performing related tasks. These objectives cover 81.75 of 206.5 classroom course hours.

TABLE 17

TASKS PERFORMED BY 20 PERCENT OR MORE AFSC 452X1 A/B/C
GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS	PERCENT MEMBERS PERFORMING				
	452X1A/B/C 1ST ENL (N=387)	DAFSC 45251A/B/C (N=637)	452X1A 1ST ENL (N=125)	452X1B 1ST ENL (N=130)	452X1C 1ST ENL (N=131)
G268 INSPECT ELECTRICAL RELAYS	48	57	35	66	41
G274 ISOLATE MALFUNCTIONS WITHIN ELECTRICAL RELAYS	50	59	41	65	44
G279 RECORD ASP LATCH DATA	43	48	41	42	48
G280 REMOVE OR INSTALL COAXIAL CABLES	57	64	78	15	77
G281 REMOVE OR INSTALL COAXIAL CONNECTORS	58	65	82	16	76
G282 REMOVE OR INSTALL ELECTRICAL RELAYS	52	64	42	68	47
G283 REMOVE OR INSTALL MULTIPIN (COAXIAL OR TRIAXIAL CONNECTORS)	51	58	77	22	55
G284 REMOVE OR INSTALL MULTIPIN CONNECTORS (CANNON PLUG)	76	76	82	73	73
G285 REMOVE OR INSTALL TRIAXIAL CABLES	41	52	76	11	38
G286 REMOVE OR INSTALL TRIAXIAL CONNECTORS	43	53	78	8	44
H300 ISOLATE MALFUNCTIONS WITHIN INDICATOR GROUP (IG) SYSTEMS	29	44	74	15	2
H319 PERFORM OPERATIONAL CHECKOUT AND BIT OF IG SYSTEMS	26	44	70	8	2
H330 REMOVE OR INSTALL IG SYSTEM LRUs	25	45	70	7	0
I340 APPLY FLIGHT INSTRUMENT RANGE MARKINGS	22	27	0	66	1
I364 PERFORM BORESIGHT ALIGNMENT CHECKS OF DISPLACEMENT GYRO (DG) MOUNTS	8	12	1	24	0
I365 PERFORM BORESIGHT PHYSICAL ALIGNMENTS OF DG MOUNTS	8	12	1	22	0
J405 CODE MODE 4 CRYPTO EQUIPMENT	36	39	4	8	94

TABLE 18A

EXAMPLES OF TECHNICAL TASKS WITH GREATER THAN 30 PERCENT
MEMBERS PERFORMING AND NOT REFERENCED TO FOI G3AIQR45231A-000

TASKS	452X1A 1-48 MONTHS TAFMS (N=125)	TNG EMP*	TASK DIFF**
G271 INSPECT WAVEGUIDES	88	5.48	5.02
H299 ISOLATE MALFUNCTIONS WITHIN HUD SYSTEMS	88	5.82	5.35
H329 REMOVE OR INSTALL HUD SYSTEM LINE REPLACEABLE UNITS (LRU)	88	5.03	4.17
H297 ISOLATE MALFUNCTIONS WITHIN CENTRAL COMPUTER (CC) SYSTEMS	86	5.87	5.60
H318 PERFORM OPERATIONAL CHECKOUT AND BIT OF HUD SYSTEMS	86	5.55	4.53
H331 REMOVE OR INSTALL INS LRUs	86	5.27	4.02
H304 ISOLATE MALFUNCTIONS WITHIN OVERLOAD WARNING SYSTEMS (OWS)	85	5.76	5.96
H317 PERFORM OPERATIONAL CHECKOUT AND BUILT-IN TEST (BIT) OF CC SYSTEMS	85	5.48	4.54
F188 CONNECT OR DISCONNECT AIRCRAFT HYDRAULIC TEST STANDS OR HYDRAULIC POWER	84	6.16	4.18
H332 REMOVE OR INSTALL LCGs	84	5.00	3.99
H302 ISOLATE MALFUNCTIONS WITHIN LEAD COMPUTING GYROS (LCG)	83	5.53	4.93
G263 ANALYZE AVIONICS STATUS PANEL (ASP) LATCH DATA	82	5.18	3.55
H315 PERFORM CHECKOUT OF NCI PANELS	82	5.19	4.74
G273 ISOLATE MALFUNCTIONS WITHIN COAXIAL CABLES AND CONNECTORS	80	6.02	6.85
G272 ISOLATE MALFUNCTIONS WITHIN AIRCRAFT WIRING	79	6.60	6.94
G275 ISOLATE MALFUNCTIONS WITHIN MULTIPIN CONNECTORS	79	6.21	6.50
G265 INSPECT AIRCRAFT WIRING	78	5.92	5.05
H300 ISOLATE MALFUNCTIONS WITHIN INDICATOR GROUP (IG) SYSTEMS	74	5.81	5.30
H330 REMOVE OR INSTALL IG SYSTEM LRUs	70	5.06	4.15
F223 PERFORM PREUSE INSPECTION OF HYDRAULIC TEST STANDS OR HYDRAULIC POWER	63	5.05	4.18

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

Ninety-four tasks performed by 30 percent or more B-shred first-enlistment personnel were not matched with POI objectives. Tasks relating to instrument and flight control systems and general avionic systems maintenance account for the majority of unreferenced tasks. In addition to high levels of performance, several of these tasks are rated high in terms of TE and TD. Examples of these tasks with survey data are listed in Table 18B.

POI G3AIQR45231C: This Phase I C-shred POI had 25 objectives matched to task items. As with the other two POIs, all areas were supported. All matched knowledge and performance level objectives had 30 percent or more of AFSC 45231C first-enlistment personnel performing related tasks. These objectives cover 76.25 of 200.5 classroom course hours.

Eighty tasks performed by 30 percent or more C-shred first-enlistment personnel were not matched with POI objectives. Tasks relating to communication, navigation, and penetration aids systems and general avionic systems maintenance account for the majority of unreferenced tasks. In addition to high levels of performance, several of these tasks are also rated high in terms of TE and TD. Examples of these tasks with survey data are listed in Table 18C.

Summary: Overall, each POI is well supported. Although there are several tasks with high percentages of A-, B-, and C-shred first-enlistment personnel performing which are not matched to any POI objectives, many of these tasks are recognized as difficult to teach at the technical school due to the lack of appropriate equipment and time constraints. However, training personnel are encouraged to review the computer printouts of the POIs with particular emphasis placed on reviewing the tasks not referenced located in the Training Extracts to determine if new areas should be added to the basic course.

Review of Phase II Training Documents

As requested by career field managers, the CTSs and POIs for the Phase II AFSC-awarding courses, J4ABF45231A-002, F-15 Avionic Systems Specialist (Attack Control); J4ABF45231B-002, F-15 Avionic Systems Specialist (Instrument and Flight Controls); and J4ABF45231C-002, F-15 Avionic Systems Specialist (Comm, Nav and Penn Aids), dated June 1989, were also examined. These courses provide training for Air Force personnel in the skills and knowledge needed to perform as an Apprentice F-15 Avionic System Specialist.

The CTS is designed to expand on STS objectives, as well as provide detailed training on advanced equipment. The scope of instruction in the J4ABF45231A course includes: operational checks of the Inertial Navigation System, Central Computer, Head Up Display System, Lead Computing Gyro, Radar System, Indicator group, Overload Warning System, Multipurpose Color Display, and Video Tape Recording System. The spectrum of training in the J4ABF45231B course includes: operational checks of the Built-In-Test, Hydraulic Pressure Indicating, Fuel Quantity Indicating, Air Data Computer, Horizontal Situation Indicating, Attitude Heading Reference, Air Inlet Control, and Flight Control,

TABLE 18B

EXAMPLES OF TECHNICAL TASKS WITH GREATER THAN 30 PERCENT
MEMBERS PERFORMING AND NOT REFERENCED TO POI G3AIQR45231B-000

TASKS	452X1B 1-48 MONTHS TAFMS (N=130)	TNG EMP*	TASK DIFF**
I370 PERFORM OPERATIONAL CHECKOUT AND BIT OF AHRs	97	5.15	4.42
I344 ISOLATE MALFUNCTIONS WITHIN AIR INLET CONTROL SYSTEMS (AICS)	92	5.60	6.21
I350 ISOLATE MALFUNCTIONS WITHIN FUEL FLOW INDICATING SYSTEMS	90	4.94	5.33
I352 ISOLATE MALFUNCTIONS WITHIN HORIZONTAL SITUATION INDICATING (HSI) SYSTEMS	89	5.18	5.42
I371 PERFORM OPERATIONAL CHECKOUT AND BIT OF AICSs	89	5.27	4.59
G277 PERFORM AIRCRAFT SAFE FOR MAINTENANCE CHECKS	88	6.76	4.24
I343 ISOLATE MALFUNCTIONS WITHIN AIR DATA COMPUTER (ADC) SYSTEMS	88	5.47	5.96
I369 PERFORM OPERATIONAL CHECKOUT AND BIT OF ADC SYSTEMS	88	5.18	4.47
F188 CONNECT OR DISCONNECT AIRCRAFT HYDRAULIC TEST STANDS OR HYDRAULIC POWER	87	6.16	4.18
I347 ISOLATE MALFUNCTIONS WITHIN BUILT-IN TEST (BIT) CONTROL PANEL SYSTEMS	83	5.24	5.21
G272 ISOLATE MALFUNCTIONS WITHIN AIRCRAFT WIRING	81	6.60	6.94
G263 ANALYZE AVIONICS STATUS PANEL (ASP) LATCH DATA	78	5.18	3.55
G265 INSPECT AIRCRAFT WIRING	76	5.92	5.05
F223 PERFORM PREUSE INSPECTION OF HYDRAULIC TEST STANDS OR HYDRAULIC POWER	71	5.05	4.14
G269 INSPECT MULTIPIN CONNECTORS	65	5.89	4.76
G274 ISOLATE MALFUNCTIONS WITHIN ELECTRICAL RELAYS	65	6.52	5.23
G266 INSPECT CHAFING PROBLEM AREAS	64	5.39	5.04
G275 ISOLATE MALFUNCTIONS WITHIN MULTIPIN CONNECTORS	63	6.21	6.50
H292 ISOLATE MALFUNCTIONS TO CONTROL STICK GRIPS	55	5.27	5.64

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 18C

EXAMPLES OF TECHNICAL TASKS WITH GREATER THAN 30 PERCENT
MEMBERS PERFORMING AND NOT REFERENCED TO POI G3AIQR45231C-000

TASKS	452X1C 1-48 MONTHS TAFMS (N=131)	TNG EMP*	TASK DIFF**
J424 PERFORM OPERATIONAL CHECKOUT AND BIT OF AAI SYSTEMS	96	5.39	4.70
J412 ISOLATE MALFUNCTIONS WITHIN IDENTIFICATION FRIEND OR FOE (IFF) SYSTEMS	95	5.63	5.61
J426 PERFORM OPERATIONAL CHECKOUT AND BIT OF IFF SYSTEMS	95	4.41	5.37
J432 PERFORM OPERATIONAL CHECKOUT AND BIT OF UHF COMMUNICATION	93	5.47	4.62
J413 ISOLATE MALFUNCTIONS WITHIN INSTRUMENT LANDING SYSTEMS (I'S)	92	5.19	5.30
J425 PERFORM OPERATIONAL CHECKOUT AND BIT OF ADF SYSTEMS	90	5.02	4.21
G263 ANALYZE AVIONICS STATUS PANEL (ASP) LATCH DATA	88	5.18	3.55
J411 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC DIRECTION FINDER (ADF) SYSTEMS	88	5.13	5.32
J414 ISOLATE MALFUNCTIONS WITHIN INTERFERENCE BLANKER SYSTEMS (IBS)	88	5.23	5.21
G267 INSPECT COAXIAL CABLES AND CONNECTORS	86	5.69	5.07
J431 PERFORM OPERATIONAL CHECKOUT AND BIT OF TEWS RWRs	83	5.15	4.65
G272 ISOLATE MALFUNCTIONS WITHIN AIRCRAFT WIRING	80	6.60	6.94
G269 INSPECT MULTIPIN CONNECTORS	79	5.89	4.76
G273 ISOLATE MALFUNCTIONS WITHIN COAXIAL CABLES AND CONNECTORS	79	6.02	6.85
G271 INSPECT WAVEGUIDES	76	5.48	5.02
J419 ISOLATE MALFUNCTIONS WITHIN TEWS INTERNAL COUNTERMEASURES SYSTEMS (ICMS)	76	5.29	5.99
G265 INSPECT AIRCRAFT WIRING	75	5.92	5.05
J417 ISOLATE MALFUNCTIONS WITHIN TEWS ELECTRONIC WARFARE WARNING SYSTEMS (EWWS)	73	5.26	5.87
G266 INSPECT CHAFING PROBLEM AREAS	66	5.39	5.04

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

and Flight Controls systems. The range of instruction in the J4ABF45231C course includes: operational checks of the Communication System, Navigational System, and Tactical Electronic Warfare System (TEWS). Also included in all three courses are powered and non-powered aircraft support equipment, component removal and installation, troubleshooting aircraft wiring, safety corrosion identification/control, technical publications, foreign object damage prevention, and fraud, waste, and abuse information.

Based on assistance from specialists at the 532d FTD, Holloman AFB, the CTSs and POIs were matched to survey task statements. A similar method to that of the STS and Phase I POIs analysis was employed in the review of the Phase II CTSs and POIs. The specific data examined include TE, TD, and percent of the appropriate first-enlistment members performing.

Review of J4ABF45231A/B/C-002 Course Training Standards (CTS)

Analysis of the survey data indicates that the three CTSs are well supported. The 45231A and 45231B CTSs had 15 matched elements which were all supported by greater than 20 percent of the appropriate personnel performing the matched tasks. Likewise, the 28 matched elements of the 45231C CTS were also supported.

However, each CTS does not reference several tasks that are performed by 20 percent or more of the first-enlistment personnel. The 45231A CTS was not matched to 76 technically oriented tasks. Table 19A provides examples of these tasks. As shown, the majority of these tasks involve attack control systems maintenance. More than 75 tasks were also not matched to the 45231B CTS. As expected, these tasks are centered around instrument and flight control systems maintenance. Examples of the tasks not referenced to the B-shred CTS are displayed in Table 19B. The 45231C CTS had the most tasks not matched, with 96 technical tasks performed by greater than 20 percent of the C-shred first-enlistment personnel. Examples of these comm, nav, and pen aids systems maintenance-related tasks are shown in Table 19C. Several of these nonreferenced tasks are also rated high in terms of TD. A complete detailed listing is located in the Training Extracts. This list of tasks not referenced should be carefully screened for inclusion or expansion into the CTS.

Review of J4ABF45231A/B/C-002 Plans of Instruction (POI)

The three Phase II POIs were reviewed based on the same criteria used to evaluate the Phase I POIs. A POI objective is considered supported if 30 percent or more of A-, B-, or C-shred first-enlistment personnel perform a related task. An analysis of the survey data indicates that the three Phase II POIs are well supported. POI 45231A had 14 performance level objectives matched to task items which were supported. These objectives covered 99 of 110 course hours. POI 45231B had 15 performance level objectives matched to task items, and all were supported. These objectives covered 81 of 88 course hours. Finally, of the 28 performance level objectives matched with task items in POI 45231C, all were supported. These objectives covered 102 of 112 course hours.

TABLE 19A

EXAMPLES OF TASKS WITH 20 PERCENT OR MORE AFSC 452X1A GROUP MEMBERS
MEMBERS PERFORMING AND NOT REFERENCED TO THE CTS

TASKS	452X1A 1-48 MONTHS TAFMS (N=125)	TNG EMP*	TASK DIFF**
H301 ISOLATE MALFUNCTIONS WITHIN INERTIAL NAVIGATION SYSTEMS (INS)	89	6.08	5.22
H299 ISOLATE MALFUNCTIONS WITHIN HUD SYSTEMS	88	5.82	5.35
H329 REMOVE OR INSTALL HUD SYSTEM LINE REPLACEABLE UNITS (LRU)	88	5.03	4.17
H331 REMOVE OR INSTALL INS LRUs	86	5.27	4.02
H296 ISOLATE MALFUNCTIONS TO NAVIGATION CONTROL INDICATOR (NCI) PANELS			
H304 ISOLATE MALFUNCTIONS WITHIN OVERLOAD WARNING SYSTEMS (OWS)	85	5.40	5.29
H326 REMOVE OR INSTALL CC SYSTEMS	85	5.76	5.95
H298 ISOLATE MALFUNCTIONS WITHIN FIRE CONTROL RADAR (RDR) SYSTEMS	85	5.15	3.82
H332 REMOVE OR INSTALL LCGs	84	6.21	6.40
H302 ISOLATE MALFUNCTIONS WITHIN LEAD COMPUTING GYROS (LCG)	84	5.00	3.99
G263 ANALYZE AVIONICS STATUS PANEL (ASP) LATCH DATA	83	5.53	4.93
G281 REMOVE OR INSTALL COAXIAL CONNECTORS	82	5.18	3.55
G284 REMOVE OR INSTALL MULTIPIN CONNECTORS (CANNON PLUG)	82	5.15	5.93
H336 REMOVE OR INSTALL NCI PANEL DIGITAL READOUT DISPLAY (DRD)	82	6.00	6.03
G276 ISOLATE MALFUNCTIONS WITHIN TRIAXIAL CABLES AND CONNECTORS	82	4.85	4.20
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	81	5.48	6.90
H337 REMOVE OR INSTALL OWS LRUs	79	6.98	6.15
H334 REMOVE OR INSTALL RIGHT-HAND THROTTLE GRIPS	79	5.06	4.35
G283 REMOVE OR INSTALL MULTIPIN COAXIAL OR TRIAXIAL CONNECTORS	78	5.19	5.72
H295 ISOLATE MALFUNCTIONS TO RIGHT-HAND THROTTLE GRIPS	77	5.11	6.50
G285 REMOVE OR INSTALL TRIAXIAL CABLES	77	5.52	5.55
	76	4.73	6.16

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 19B

EXAMPLES OF TASKS WITH 20 PERCENT OR MORE AFSC 452X1B GROUP MEMBERS PERFORMING AND NOT REFERENCED TO THE CTS

TASKS	452X1B 1-48 MONTHS TAFMS (N=130)	TNG EMP*	TASK DIFF**
I344 ISOLATE MALFUNCTIONS WITHIN AIR INLET CONTROL SYSTEMS (AICS)	92	5.60	6.21
I345 ISOLATE MALFUNCTIONS WITHIN ATTITUDE HEADING REFERENCE SYSTEMS (AHRS)	91	5.45	5.66
I346 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC FLIGHT CONTROL	91	5.76	6.88
I351 ISOLATE MALFUNCTIONS WITHIN FUEL QUANTITY INDICATING SYSTEMS	91	5.40	6.25
I350 ISOLATE MALFUNCTIONS WITHIN FUEL FLOW INDICATING SYSTEMS	90	4.94	5.33
I357 ISOLATE MALFUNCTIONS WITHIN PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	90	5.03	5.90
I385 REMOVE OR INSTALL AFCS LRUs	90	4.77	4.63
I393 REMOVE OR INSTALL HSI SYSTEM LRUs	90	4.69	3.92
I352 ISOLATE MALFUNCTIONS WITHIN HORIZONTAL SITUATION INDICATING (HSI) SYSTEMS	89	5.18	5.42
I353 ISOLATE MALFUNCTIONS WITHIN HYDRAULIC PRESSURE INDICATING	89	5.00	5.21
I381 PERFORM OPERATIONAL CHECKOUT OF PITOT STATIC, HEATER, AND	89	5.15	5.22
I387 REMOVE OR INSTALL AICS LRUs	89	4.98	4.85
I341 CALIBRATE FUEL QUANTITY INDICATING SYSTEMS	88	5.29	5.28
I384 REMOVE OR INSTALL ADC SYSTEM LRUs	88	4.81	4.52
I392 REMOVE OR INSTALL FUEL QUANTITY INDICATING SYSTEM LRUs	88	4.53	4.06
I398 REMOVE OR INSTALL PITOT STATIC, HEATER, AND INSTRUMENT SYSTEM LRUs	88	4.66	4.82
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	85	6.98	6.15
F261 WALK WINGS OR TAILS DURING AIRCRAFT TOWING OPERATIONS	80	3.69	2.11
G284 REMOVE OR INSTALL MULTIPIN CONNECTORS (CANNON PLUG)	73	6.00	6.03
G282 REMOVE OR INSTALL ELECTRICAL RELAYS	68	4.56	4.04

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 19C

EXAMPLES OF TASKS WITH 20 PERCENT OR MORE AFSC 452X1C GROUP MEMBERS
MEMBERS PERFORMING AND NOT REFERENCED TO THE CTS

TASKS	452X1C 1-48 MONTHS TAFMS (N=131)	TNG EMP*	TASK DIFF**
J412 ISOLATE MALFUNCTIONS WITHIN IDENTIFICATION FRIEND OR FOE (IFF) SYSTEMS			
J436 REMOVE OR INSTALL AAI SYSTEM LINE REPLACEABLE UNITS (LRU)	95	5.63	5.61
J439 REMOVE OR INSTALL IFF SYSTEM LRUs	95	4.92	4.05
J405 CODE MODE 4 CRYPTO EQUIPMENT	95	4.89	4.01
J449 REMOVE OR INSTALL UHF COMMUNICATION AND AUDIO SIGNAL SYSTEM LRUs	94	4.63	3.70
J413 ISOLATE MALFUNCTIONS WITHIN INSTRUMENT LANDING SYSTEMS (ILS)	93	5.00	4.28
J420 ISOLATE MALFUNCTIONS WITHIN ULTRA HIGH FREQUENCY (UHF) COMMUNICATION AND AUDIO SIGNAL SYSTEMS	92	5.19	5.30
J441 REMOVE OR INSTALL MODE 4 CRYPTO EQUIPMENT LRUs	92	5.50	5.77
J443 REMOVE OR INSTALL TACAN SYSTEM LRUs	92	4.79	3.85
J407 ISOLATE MALFUNCTIONS TO MODE 4 CRYPTO EQUIPMENT	92	4.77	4.12
F261 WALK WINGS OR TAILS DURING AIRCRAFT TOWING OPERATIONS	91	5.29	5.51
G263 ANALYZE AVIONICS STATUS PANEL (ASP) LATCH DATA	89	3.69	2.11
J411 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC DIRECTION FINDER (ADF) SYSTEMS	88	5.18	3.55
J414 ISOLATE MALFUNCTIONS WITHIN INTERFERENCE BLANKER SYSTEMS (IBS)	88	5.13	5.32
J440 REMOVE OR INSTALL ILS LRUs	88	5.23	5.21
J448 REMOVE OR INSTALL TEWS RWR LRUs	88	4.60	4.01
G278 PERFORM SAFETY WIRING	85	4.74	4.60
J438 REMOVE OR INSTALL IBS LRUs	84	5.37	3.63
J437 REMOVE OR INSTALL ADF SYSTEM LRUs	84	4.66	3.88
J409 ISOLATE MALFUNCTIONS TO TACTICAL ELECTRONIC WARFARE SYSTEM (TEWS) RADAR WARNING RECEIVERS (RWR)	83	4.60	3.92
J406 CODE SECURE VOICE CRYPTO EQUIPMENT	82	5.35	6.03
J446 REMOVE OR INSTALL TEWS EWWS LRUs	79	4.53	4.24
G280 REMOVE OR INSTALL COAXIAL CABLES	79	4.56	4.43
	77	4.85	5.50

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

Similar to the CTSSs, the POIs have several tasks with greater than 30 percent members performing not matched to any POI objective. Specifically, the A-shred POI has 70 such tasks, the B-shred POI has 81 tasks, and the C-shred POI has 63 unmatched tasks. Examples of these tasks are found in Tables 20A, 20B, and 20C. As expected, tasks not matched to the 45231A POI are centered around attack control maintenance. The tasks not referenced to the 45231B POI concentrate on instrument and flight control duties. High performance tasks not matched to 45231C POI involve comm, nav, and pen aids systems maintenance. Again, training personnel should review the computer printout of the POIs.

Electronic Principles (EP)

The Electronic Principles Inventory (EPI) (AFPT 90-EPI-825) contains 712 electronic principles, skills, and equipment questions covering 39 electronic principle subject areas. Between April 1988 and September 1988, the EPI was administered to fully-qualified 5-skill level 452X1 A/B/C personnel who responded "Yes" or "No" to the 712 EPI items, indicating the electronic principles, skills, and equipment they use in their present job. Additionally, subject-matter experts matched the 712 EPI items to STS 1, Electronic Fundamentals/Applications, dated February 1987. The 452X1 A/B/C criterion groups' responses were added to the EPI document, and the final product analyzed.

Based on the resulting data, AFSC 452X1 A/B/C personnel were found covering a wide range of electronic principles in performing their jobs. Table 21 lists those electronic areas where 30 percent or more 45251A, 45251B, or 45251C airmen responded "yes" to performing in their job. These data can be extremely useful to subject-matter experts when evaluating those portions of the STS and POI concerning electronic fundamentals or principles.

JOB SATISFACTION ANALYSIS

Comparisons of group perceptions of their jobs provide career ladder managers with a means toward understanding some of the factors affecting job performance of today's airmen. These perceptions are gathered from incumbents' responses to five job satisfaction questions covering job interest, perceived utilization of talents, perceived utilization of training, sense of accomplishment, and reenlistment intentions. The responses of the current survey sample are then analyzed by making several comparisons: (1) among TAFMS groups of a comparative sample of personnel from other Mission Equipment Maintenance specialists surveyed in 1988 (AFSCs 302X0, 303X3, 304X0, 304X1, 304X5, 306X0, 306X3, 321X0, 328X0, 328X1, 411X0B, 411X0C, 427X1, 431X1, 431X2, 431X3, 431X4, and 464X0), (2) between current and previous survey TAFMS groups, and (3) across specialty job groups identified in the SPECIALTY JOBS section of this report.

TABLE 20A

EXAMPLES OF TECHNICAL TASKS WITH GREATER THAN 30 PERCENT MEMBERS PERFORMING AND NOT REFERENCED TO POI J4ABF45231A

TASKS	452X1A 1-48 MONTHS TAFMS (N=125)	TNG EMP*	TASK DIFF**
H301 ISOLATE MALFUNCTIONS WITHIN INERTIAL NAVIGATION SYSTEMS (INS)	89	6.08	5.22
H299 ISOLATE MALFUNCTIONS WITHIN HUD SYSTEMS	88	5.82	5.35
H329 REMOVE OR INSTALL HUD SYSTEM LINE REPLACEABLE UNITS (LRU)	88	5.03	4.17
H297 ISOLATE MALFUNCTIONS WITHIN CENTRAL COMPUTER (CC) SYSTEMS	86	5.87	5.60
H331 REMOVE OR INSTALL INS LRUs	86	5.27	4.02
H296 ISOLATE MALFUNCTIONS TO NAVIGATION CONTROL INDICATOR (NCI) PANELS			
H304 ISOLATE MALFUNCTIONS WITHIN OVERLOAD WARNING SYSTEMS (OWS)	85	5.40	5.29
H326 REMOVE OR INSTALL CC SYSTEMS	85	5.76	5.95
H298 ISOLATE MALFUNCTIONS WITHIN FIRE CONTROL RADAR (RDR) SYSTEMS	85	5.15	3.82
H332 REMOVE OR INSTALL LCGs	84	6.21	6.40
H302 ISOLATE MALFUNCTIONS WITHIN LEAD COMPUTING GYROS (LCG)	84	5.00	3.99
G263 ANALYZE AVIONICS STATUS PANEL (ASP) LATCH DATA	83	5.53	4.93
G281 REMOVE OR INSTALL COAXIAL CONNECTORS	82	5.18	3.55
G284 REMOVE OR INSTALL MULTIPIN CONNECTORS (CANNON PLUG)	82	5.15	5.93
H336 REMOVE OR INSTALL NCI PANEL DIGITAL READOUT DISPLAY (DRD)	82	6.00	6.03
G276 ISOLATE MALFUNCTIONS WITHIN TRIAXIAL CABLES AND CONNECTORS	82	4.85	4.20
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	81	5.48	6.90
H337 REMOVE OR INSTALL OWS LRUs	79	6.98	6.15
H334 REMOVE OR INSTALL RIGHT-HAND THROTTLE GRIPS	79	5.06	4.35
G283 REMOVE OR INSTALL MULTIPIN COAXIAL OR TRIAXIAL CONNECTORS	78	5.19	5.72
H295 ISOLATE MALFUNCTIONS TO RIGHT-HAND THROTTLE GRIPS	77	5.11	6.50
G285 REMOVE OR INSTALL TRIAXIAL CABLES	77	5.52	5.55
	76	4.73	6.16

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 20B

EXAMPLES OF TECHNICAL TASKS WITH GREATER THAN 30 PERCENT MEMBERS PERFORMING AND NOT REFERENCED TO POI J4ABF45231B

TASKS	452X1B 1-48 MONTHS TAFMS (N=130)	TNG EMP*	TASK DIFF**
I344 ISOLATE MALFUNCTIONS WITHIN AIR INLET CONTROL SYSTEMS (AICS)	92	5.60	6.21
I345 ISOLATE MALFUNCTIONS WITHIN ATTITUDE HEADING REFERENCE SYSTEMS (AHRS)	91	5.45	5.66
I346 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC FLIGHT CONTROL	91	5.76	6.88
I351 ISOLATE MALFUNCTIONS WITHIN FUEL QUANTITY INDICATING SYSTEMS	91	5.40	6.25
I350 ISOLATE MALFUNCTIONS WITHIN FUEL FLOW INDICATING SYSTEMS	90	4.94	5.33
I357 ISOLATE MALFUNCTIONS WITHIN PITOT STATIC, HEATER, AND INSTRUMENT SYSTEMS	90	5.03	5.90
I385 REMOVE OR INSTALL AFCS LRUS	90	4.77	4.63
I393 REMOVE OR INSTALL HSI SYSTEM LRUS	90	4.69	3.92
I352 ISOLATE MALFUNCTIONS WITHIN HORIZONTAL SITUATION INDICATING (HSI) SYSTEMS	89	5.18	5.42
I353 ISOLATE MALFUNCTIONS WITHIN HYDRAULIC PRESSURE INDICATING	89	5.00	5.21
I381 PERFORM OPERATIONAL CHECKOUT OF PITOT STATIC, HEATER, AND	89	5.15	5.22
I387 REMOVE OR INSTALL AICS LRUS	89	4.98	4.85
I341 CALIBRATE FUEL QUANTITY INDICATING SYSTEMS	88	5.29	5.28
I384 REMOVE OR INSTALL ADC SYSTEM LRUS	88	4.81	4.52
I392 REMOVE OR INSTALL FUEL QUANTITY INDICATING SYSTEM LRUS	88	4.53	4.06
I398 REMOVE OR INSTALL PITOT STATIC, HEATER, AND INSTRUMENT SYSTEM LRUS	88	4.66	4.82
G291 TRACE WIRING, SYSTEM, AND INTERFACE DIAGRAMS	85	6.98	6.15
F261 WALK WINGS OR TAILS DURING AIRCRAFT TOWING OPERATIONS	80	3.69	2.11
G284 REMOVE OR INSTALL MULTIPIN CONNECTORS (CANNON PLUG)	73	6.00	6.03
G282 REMOVE OR INSTALL ELECTRICAL RELAYS	68	4.56	4.04

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 20C

EXAMPLES OF TECHNICAL TASKS WITH GREATER THAN 30 PERCENT MEMBERS PERFORMING AND NOT REFERENCED TO POI J4ABF45231C

TASKS	452X1C 1-48 MONTHS TAFMS (N=130)	TNG EMP*	TASK DIFF**
J412 ISOLATE MALFUNCTIONS WITHIN IDENTIFICATION FRIEND OR FOE (IFF) SYSTEMS	95	5.63	5.61
J436 REMOVE OR INSTALL AAI SYSTEM LINE REPLACEABLE UNITS (LRU)	95	4.92	4.05
J439 REMOVE OR INSTALL IFF SYSTEM LRUs	95	4.89	4.01
J405 CODE MODE 4 CRYPTO EQUIPMENT	94	4.63	3.70
J449 REMOVE OR INSTALL UHF COMMUNICATION AND AUDIO SIGNAL SYSTEM LRUs			
J413 ISOLATE MALFUNCTIONS WITHIN INSTRUMENT LANDING SYSTEMS (ILS)	93	5.00	4.28
J420 ISOLATE MALFUNCTIONS WITHIN ULTRA HIGH FREQUENCY (UHF) COMMUNICATION AND AUDIO SIGNAL SYSTEMS	92	5.19	5.30
J441 REMOVE OR INSTALL MODE 4 CRYPTO EQUIPMENT LRUs	92	5.50	5.77
J443 REMOVE OR INSTALL TACAN SYSTEM LRUs	92	4.79	3.85
J407 ISOLATE MALFUNCTIONS TO MODE 4 CRYPTO EQUIPMENT	92	4.77	4.12
F261 WALK WINGS OR TAILS DURING AIRCRAFT TOWING OPERATIONS	91	5.29	5.51
G263 ANALYZE AVIONICS STATUS PANEL (ASP) LATCH DATA	89	3.69	2.11
J411 ISOLATE MALFUNCTIONS WITHIN AUTOMATIC DIRECTION FINDER (ADF) SYSTEMS	88	5.18	3.55
J414 ISOLATE MALFUNCTIONS WITHIN INTERFERENCE BLANKER SYSTEMS (IBS)	88	5.13	5.32
J440 REMOVE OR INSTALL ILS LRUs	88	5.23	5.21
J448 REMOVE OR INSTALL TEWS RWR LRUs	88	4.60	4.01
G278 PERFORM SAFETY WIRING	85	4.74	4.60
J438 REMOVE OR INSTALL IBS LRUs	84	5.37	3.63
J437 REMOVE OR INSTALL ADF SYSTEM LRUs	84	4.66	3.88
J409 ISOLATE MALFUNCTIONS TO TACTICAL ELECTRONIC WARFARE SYSTEM (TEWS) RADAR WARNING RECEIVERS (RWR)	83	4.60	3.92
J406 CODE SECURE VOICE CRYPTO EQUIPMENT	82	5.35	6.03
J446 REMOVE OR INSTALL TEWS EWWS LRUs	79	4.53	4.24
G280 REMOVE OR INSTALL COAXIAL CABLES	79	4.56	4.43
	77	4.85	5.50

* Average Training Emphasis = 2.92 with SD of 1.99 (high = 4.91)

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 21

ELECTRONIC PRINCIPLES USED BY 30 PERCENT OR MORE
OF AFSC 45251A, 45251B, OR 45251C PERSONNEL

Principle	45251A	45251B	45251C	Principle	45251A	45251B	45251C
Basic Terms	X	X	X	Receivers	X		X
Basic Circuits	x	X	X	Transmission Lines	X		X
Relays/Solenoids	X	X	X	Waveguides	X		X
Solder/Desolder	X	X	X	Transmitters	X		X
Assemble Solderless Connector	X	X	X	Transmission Power	X		X
Multimeter, Analog	X	X	X	Antennas	X		X
Multimeter, Digital	X	X	X	Reflectometer	X		X
Digital Logic Functions	X	X	X	Wave Generating Circuits	X		X
Computers	X	X	X	Digital Numbering System	X		X
Integrated Circuits	X	X	X	Synchro/Servos	X	X	X
Power Supply Circuits	X	X	X	Bipolar Junction Transistors	X	X	X
Solid State Diodes	X	X	X	Capacitors	X	X	X
D/A, A/D Converters	X	X	X	Transformers		X	X
Microwave Oscillators & Amplifier	X			DC Motors		X	X
Cathode Ray Tubes	X			AC Motors		X	X
Microphones		X		Transducers		X	X

X = Greater than 30 percent

First-enlistment (1-48 months TAFMS), second-enlistment (49-96 months TAFMS), and career (97+ months TAFMS) group data are listed in Table 22 and are compared to corresponding enlistment groups from other Mission Equipment Maintenance AFSCs surveyed during the previous calendar year. These data give a relative measure of how the job satisfaction of AFSC 452X1 personnel compares with that of other similar Air Force specialties. Generally, enlistment groups of the DAFSC 452X1 sample indicate similar or slightly higher levels of job satisfaction than do those of the comparative sample. This is demonstrated particularly in the areas of utilization of training by second enlistment personnel. However, all F-15 Avionic Systems respondent groups indicated lower intentions of reenlisting.

An indication of changes in job satisfaction perceptions within the career ladder is provided in Tables 23A, 23B, and 23C where TAFMS group data for 1990 AFSC 452X1A, 452X1B, and 452X1C survey respondents are presented, along with data from respondents to the last occupational survey report of the career ladder. As discussed earlier in the INTRODUCTION, three separate OSRs were published which included F-15 Avionic Systems personnel prior to their AFSC conversion. These OSRs and their date of completion are shown below:

March 1982 - 326X6 A/B/C (Attack Control Systems)
March 1982 - 326X7 A/B/C (Instrument and Flight Control
Systems)
June 1982 - 326X8 A/B/C (Communication, Navigation,
and Penetration Aids Systems)

The B-shred in these OSRs (AFSC 326X6B, 326X7B, and 326X8B) identifies the F-15 personnel used for this comparison.

Generally, perceptions of job satisfaction have improved since the 1982 OSRs. AFSC 452X1A first-enlistment and career personnel from the 1990 sample exceed utilization of talent figures from the 1982 sample by 22 and 17 percent, respectively. First-enlistment member reenlistment intentions have also increased from 31 percent to 54 percent indicating positive intentions to reenlist. The 1990 AFSC 452X1B second-enlistment personnel showed greatest improvement in perceptions associated with job interests and utilization of talents. First-enlistment and career airmen also indicated a 18 and 15 percent increase in probability of reenlisting. Similar to the A- and B-shred satisfaction indicators, AFSC 452X1C first- and second-enlistment members from the 1990 sample exceeds utilization of talents figures from the 1982 sample by over 15 percent. First-enlistment members also indicated a vast improvement of job interest with an increase from 50 percent of the 1982 sample indicating their job as "interesting" to 81 percent of the current sample, an improvement of 31 percent. Overall, analysis of job satisfaction indicators suggests incumbents of the 452X1 A/B/C career ladder appear satisfied with their job.

TABLE 22

COMPARISON OF JOB SATISFACTION DATA BY 452X1 A/B/C
AND COMPARATIVE SAMPLE GROUPS*
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	452X1 (N=387)	1988 COMP SAMPLE (N=6,152)	452X1 (N=249)	1988 COMP SAMPLE (N=4,464)	452X1 (N=402)	1988 COMP SAMPLE (N=6,451)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	78	73	71	71	72	73
SO-SO	14	17	18	16	19	16
DULL	10	10	10	12	9	10
<u>PERCEIVED USE OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY	78	77	80	78	80	80
LITTLE OR NOT AT ALL	21	21	20	22	20	20
<u>PERCEIVED USE OF TRAINING</u>						
FAIRLY WELL TO PERFECTLY	83	82	81	74	75	73
LITTLE OR NOT AT ALL	17	18	19	26	25	26
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>						
SATISFIED	74	72	69	66	66	67
NEUTRAL	12	12	14	12	10	11
DISSATISFIED	13	16	17	21	24	22

* Comparative Sample is composed of all Mission Equipment Maintenance career ladders surveyed in 1988 (includes AFSCs 302X0, 304X0, 304X1, 304X5, 306X0, 306X3, 321X0, 328X0, 328X1, 411X0B, 411X0C, 427X1, 431X1, 431X2, 431X3, 431X4, and 464X0)

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

TABLE 22 (CONTINUED)

COMPARISON OF JOB SATISFACTION DATA BY 452X1 A/B/C
AND COMPARATIVE SAMPLE GROUPS*
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS	49-96 MOS TAFMS	97+ MOS TAFMS
	1988	1988	1988
	452X1 (N=387)	452X1 (N=249)	452X1 (N=402)
	COMP SAMPLE (N=6,152)	COMP SAMPLE (N=4,464)	COMP SAMPLE (N=6,451)
YES, OR PROBABLY YES	47	54	71
NO, OR PROBABLY NO	52	45	16
PLAN TO RETIRE	-	1	13
			74 11 14

REENLISTMENT INTENTIONS

* Comparative Sample is composed of all Mission Equipment Maintenance career ladders surveyed in 1988 (includes AFSCs 302X0, 304X0, 304X1, 304X5, 306X0, 306X3, 321X0, 328X0, 328X1, 411X0B, 411X0C, 427X1, 431X1, 431X2, 431X3, 431X4, and 464X0)

- Denotes less than .5 percent

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

TABLE 23A

COMPARISON OF 452X1A JOB SATISFACTION INDICATORS
FOR CURRENT AND PREVIOUS SURVEY
(PERCENT MEMBERS RESPONDING)

	<u>1-48 MOS TAFMS</u>		<u>49-96 MOS TAFMS</u>		<u>97+ MOS TAFMS</u>	
	1990	1982	1990	1982	1990	1982
	452X1A (N=125)	326X68 (N=77)	452X1A (N=78)	326X6X (N=94)	452X1A (N=105)	326X6X (N=153)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	72	61	76	63	71	63
SO-SO	15	21	19	19	17	20
DULL	13	17	5	17	11	17
<u>PERCEIVED USE OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	78 22	56 43	77 23	56 44	86 14	69 30
<u>PERCEIVED USE OF TRAINING</u>						
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	81 19	70 29	83 17	71 28	61 38	73 26
<u>REENLISTMENT INTENTIONS</u>						
YES, OR PROBABLY YES	54	31	55	43	72	69
NO, OR PROBABLY NO	45	69	42	56	27	18
PLAN TO RETIRE	1	0	1	1	1	13

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

TABLE 23B

COMPARISON OF 452X1B JOB SATISFACTION INDICATORS
FOR CURRENT AND PREVIOUS SURVEY
(PERCENT MEMBERS RESPONDING)

	<u>1-48 MOS TAFMS</u>		<u>49-96 MOS TAFMS</u>		<u>97+ MOS TAFMS</u>	
	1990	1982	1990	1982	1990	1982
	452X1B	326X7B	452X1B	326X7X	452X1B	326X7X
	(N=130)	(N=62)	(N=71)	(N=102)	(N=67)	(N=123)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	79	73	82	69	70	72
SO-SO	12	16	7	14	19	12
DULL	7	11	11	17	10	15
<u>PERCEIVED USE OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY	83	74	83	72	77	80
LITTLE OR NOT AT ALL	17	26	17	28	22	20
<u>PERCEIVED USE OF TRAINING</u>						
FAIRLY WELL TO PERFECTLY	84	76	82	80	72	73
LITTLE OR NOT AT ALL	16	23	18	19	27	26
<u>REENLISTMENT INTENTIONS</u>						
YES, OR PROBABLY YES	44	26	54	55	78	63
NO, OR PROBABLY NO	55	73	45	45	19	16
PLAN TO RETIRE	0	0	1	-	3	19

- Denotes less than .5 percent

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

TABLE 23C

COMPARISON OF 452X1C JOB SATISFACTION INDICATORS
FOR CURRENT AND PREVIOUS SURVEY
(PERCENT MEMBERS RESPONDING)

	<u>1-48 MOS TAFMS</u>		<u>49-96 MOS TAFMS</u>		<u>97+ MOS TAFMS</u>	
	1990	1982	1990	1982	1990	1982
	452X1C	326X8B	452X1C	326X8X	452X1C	326X8X
	(N=131)	(N=77)	(N=85)	(N=98)	(N=50)	(N=139)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	81	50	56	55	66	68
SO-SO	14	34	27	18	26	17
DULL	5	16	16	27	8	15
<u>PERCEIVED USE OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY	75	61	78	60	68	63
LITTLE OR NOT AT ALL	25	39	22	40	32	37
<u>PERCEIVED USE OF TRAINING</u>						
FAIRLY WELL TO PERFECTLY	75	64	75	64	82	63
LITTLE OR NOT AT ALL	16	36	25	35	18	37
<u>REENLISTMENT INTENTIONS</u>						
YES, OR PROBABLY YES	53	40	51	50	84	61
NO, OR PROBABLY NO	47	60	49	48	14	19
PLAN TO RETIRE	0	0	0	0	2	19

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

Table 24 presents job satisfaction data for the major jobs (clusters and independent job types) identified in the career ladder structure for AFSC 452X1. An examination of this data can reveal the influences performing certain jobs may have on overall job satisfaction. Job satisfaction indicators for the specialty job groups suggest members across the career ladder are generally content. Twelve of the thirteen jobs responded with high levels of satisfaction. Over 69 percent of each of the career ladder jobs rated their job as "interesting." However, over 50 percent of the Logistics Support cluster described their jobs as "so-so" or "dull." Similarly, over 80 percent of each of the major career ladder jobs also indicated a high perceived use of training. Again, over 60 percent of the members in the Logistics Support cluster perceived little utilization of training. As a whole, members in the Logistics Support cluster reflect relatively lower levels of satisfaction when compared to the other jobs. Members of this job expressed less utilization of their talents and training, as well as neutral to dissatisfied feelings toward accomplishments achieved from their work. On the other hand, the members in the other major specialty jobs display high levels of overall satisfaction, with greater than 50 percent responding positively across all indicators.

ANALYSIS OF MAJOR COMMANDS (MAJCOM)

Occupational survey data can be used in examining differences in duty and task performance data across major commands. Highlighting these differences may identify any specific needs MAJCOMS may have due to distinguishing performance functions. The seven users of AFSC 452X1 A/B/C personnel (AAC, USAFE, AFLC, AFSC, ATC, PACAF, and TAC) were examined and, with the exception of AFLC and ATC, no distinguishable differences were noted. The overall job descriptions of all but the two exceptions are comparable.

The two exceptions noted during the MAJCOM analysis are Air Force Logistics Command and Air Training Command. Four of the five members in AFLC perform in the Aircraft Battle Damage Repair IJT discussed in the SPECIALTY JOBS section of this report. These individuals perform the unique job of repairing simulated battle damages on aircraft. These airmen spend nearly 70 percent of their job time performing general aircraft handling tasks and general avionics systems maintenance. This is compared to less than 30 percent by the other major commands. Also, the AFLC members perform an average of 56 tasks, which is significantly less than the average 125 tasks performed by the other MAJCOMs. Air Training Command, the other noted exception, also performs significantly fewer tasks than the other major commands. The 51 members in ATC perform an average of 55 tasks and spend over 37 percent of their job time performing training functions. These dissimilarities identified in the MAJCOM analysis were expected. The members in the remaining major commands perform the entire spectrum of tasks and duties and, therefore, show no significant differences.

TABLE 24

JOB SATISFACTION DATA BY CAREER LADDER JOBS
(PERCENT MEMBERS RESPONDING)

	ATTACK CONTROL SYSTEMS CLUSTER (STG112)	INSTR & FLT CONTROL SYSTEMS CLUSTER (STG098)	COMM, NAV & PEN AIDS SYSTEMS CLUSTER (STG071)	MULTI- SYSTEMS CLUSTER (STG116)	AVIONIC TRAINING CLUSTER (STG024)	AVIONIC SUPERVISORS CLUSTER (STG049)	LOGISTICS SUPPORT CLUSTER (STG044)
<u>EXPRESSED JOB INTEREST:</u>							
INTERESTING	77	80	69	75	85	69	41
SO-SO	17	13	21	19	13	16	16
DULL	6	7	10	5	3	15	43
<u>PERCEIVED USE OF TALENTS:</u>							
FAIRLY WELL TO PERFECTLY	53	84	75	85	87	76	43
LITTLE OR NOT AT ALL	17	16	25	15	13	24	57
<u>PERCEIVED USE OF TRAINING:</u>							
FAIRLY WELL TO PERFECTLY	85	84	82	82	92	83	35
LITTLE OR NOT AT ALL	15	15	18	17	8	27	65
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>							
SATISFIED	71	80	68	70	77	58	46
NEUTRAL	17	10	13	12	3	11	11
DISSATISFIED	13	10	19	19	21	31	43
<u>REENLISTMENT INTENTIONS:</u>							
YES, OR PROBABLY YES	55	52	55	73	77	55	57
NO, OR PROBABLY NO	43	47	43	22	21	20	30
PLAN TO RETIRE	1	-	1	5	3	25	14

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

TABLE 24 (CONTINUED)

JOB SATISFACTION DATA BY CAREER LADDER JOBS
(PERCENT MEMBERS RESPONDING)

	QUALITY ASSURANCE IJT (STG079)	DEBRIEFERS IJT (STG060)	FLIGHTLINE EXPEDITERS IJT (STG078)	CONTROLLERS IJT (STG061)	PREVENTIVE MAINTENANCE IJT (STG130)	BATTLE DAMAGE REPAIR IJT (STG092)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	100	80	80	80	80	80
SO-SO	0	0	20	20	20	0
DULL	0	20	0	0	0	20
<u>PERCEIVED USE OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY	75	100	40	80	100	80
LITTLE OR NOT AT ALL	25	0	60	20	0	20
<u>PERCEIVED USE OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY	88	100	20	40	80	60
LITTLE OR NOT AT ALL	13	0	80	60	20	40
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>						
SATISFIED	75	60	20	60	60	60
NEUTRAL	0	0	20	20	0	0
DISSATISFIED	25	40	60	20	40	40
<u>REENLISTMENT INTENTIONS:</u>						
YES, OR PROBABLY YES	38	60	0	100	60	80
NO, OR PROBABLY NO	38	40	0	0	20	20
PLAN TO RETIRE	25	0	100	0	20	0

NOTE: Columns may not add to 100 percent due to nonresponse and rounding

ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS

Comparisons were made between the tasks performed and the background data for DAFSC 45251 personnel assigned to the continental United States (CONUS, N=423) versus those assigned overseas (N=214). An examination of the tasks and duties performed by the two groups indicates only minor differences in equipment maintained and number of tasks performed. Overseas personnel utilize a greater variety of test equipment than their CONUS counterparts. Test equipment used by significantly more overseas specialists than CONUS specialists includes improved radar simulator (AN/APM-427), linear gauge (Pogo stick), air-to-air IFF interrogator (AAI) test set, IFF transponder (AN/ASM-424) test set, and instrument landing system (ILS) test set. Another notable difference is the models of the F-15 aircraft maintained. Personnel assigned to CONUS are maintaining avionic systems on all models of the F-15, while overseas personnel are maintaining avionic systems primarily on the F-15 "C" and "D" models.

A review of the average number of tasks performed by these two groups indicates that overseas personnel tend to perform slightly more tasks (127 tasks) than their CONUS counterparts (117 tasks). Data also indicate that a higher percent of overseas F-15 avionic systems specialists are maintaining communications, navigation, and penetration aids systems. Comparison of general background data reveals no differences in characteristics between the two groups. Job satisfaction indicators are also highly similar.

SPECIAL ISSUES

During the survey process, information can be gathered to address items of concern to career ladder training managers. AFSC 452X1 career field managers were particularly interested in special experience identifiers (SEIs).

There are three SEIs which can be awarded to airmen in the 452X1 career ladder. An airmen may have SEI 681, Attack Control Systems (ACS); SEI 682, Instrument and Flight Control Systems (IFCS); or SEI 683, Communication, Navigation, and Penetration Aids Systems (CNPAS). Inventory respondents were asked what SEIs they currently hold and what SEIs they are currently in training for, but have not yet received. To be awarded one of these SEIs, a member must complete the FTD course, 5-level CDC, minimum JQS for ACS, or IFCS, or CNPAS, and be recommended by his/her supervisor. Table 25 displays the responses by skill-level groups. Overall, more 7-skill level personnel hold SEIs, with the largest percentage holding SEI 681, Attack Control Systems.

TABLE 25

SPECIAL EXPERIENCE IDENTIFIERS (SEIs)
AMONG 452X1A/B/C PERSONNEL

SEI AWARDED	DUTY AFSC		
	45231/51A (N=309)	45231/51B (N=267)	45231/51C (N=266)
681 Attack Control Systems	69%	12%	8%
682 Instrument and Flight Control Systems	13%	63%	6%
683 Communication, Navigation, and Penetration Aids Systems	11%	10%	64%
			52%
			33%
			37%

SEI TRAINING	DUTY AFSC		
	45231/51A (N=309)	45231/51B (N=267)	45231/51C (N=266)
681 Attack Control Systems	17%	28%	28%
682 Instrument and Flight Control Systems	30%	19%	29%
683 Communication, Navigation, and Penetration Aids Systems	36%	40%	28%
			23%
			30%
			29%

WRITE-IN COMMENTS

Occupational survey booklets include blank pages on which career ladder members may write in additional tasks or make comments about any subjects. Review of job inventory write-in comments from survey sample respondents indicates a general concern in two specific areas: Rivet Workforce and the increased responsibilities of the job, and misutilization of new 3-skill levels. Following are a few sample comments expressing these concerns:

"Overall Rivet Workforce is a good concept if we had more time to learn it. But we're overworked. Jets are staying down longer because we aren't as familiar with the system as a true shopper."

". . . is not really proficient in all three systems. It's hard enough to keep up with the new technology of his own system."

"I feel Rivet Workforce is going too far. It is very hard to keep proficient on other shop systems when you are trying to keep up on your own system that you work on."

"Sure I know the basics, but if there is indepth problem (isolate), . . . you have to send the plane back."

"Not only are we going into Rivet Workforce and expected to become proficient in all areas, we are also expected to become Dedicated Crew Chiefs. This is spreading an individual to the outer limits and accidents and problems are resulting."

". . . recommend that soon as trainees are out of school, don't assign them to additional duties until they get experience. They're loosing everything from school (i.e. don't put them on the washrack, corrosion control. . .)"

". . . and as soon as I arrived in the unit, I was assigned to extra duty. I have not been able to work on the flightline."

Several additional write-in tasks were to this nature:

"Buff floors, take out garbage"

"Daily janitorial services"

"Janitorial tasks and initiate paperwork"

IMPLICATIONS

The primary purpose of this Occupational Survey Report is to assist verification of utilization and training of the restructured F-15 Avionic Systems program. The survey data will also assist in future consolidation efforts of the field training detachment (FTD) courses with the current fundamental courses located at Lowry AFB.

Analysis of the 452X1 career ladder structure identified six clusters and seven independent job types. Three of the clusters were shred specific and centered around one of the three avionic system. Personnel maintaining either the attack control systems, instrument and flight control systems, or the communication, navigation, and penetration aids systems were clearly performing separate and unique tasks associated with the respective system. One cluster, however, contained personnel representing "A," "B," and "C" shreds and performed tasks associated with all three avionic systems. This single job of 155 airmen indicates that AFSC 452X1 members are capable of meeting Rivet Workforce goals of minimizing an aircraft systems maintenance dependence on several shred specific system specialists. The other jobs identified are involved with nontechnical support functions, such as training and logistics support. The results of the career ladder structure analysis were compared to the previous studies conducted in 1982. Despite major reorganization under Rivet Workforce in 1987, the fundamental jobs have not changed. Nine of the thirteen jobs identified in this survey were also recognized in the previous surveys. Recapitulating, although the F-15 Avionic Systems specialists have not yet become fully tri-system sufficient, Rivet Workforce has slightly impacted the 452X1 career ladder.

The AFR 39-1 specialty descriptions for the F-15 Avionic Systems specialty were analyzed to determine the adequacy of coverage for career ladder duties. Overall, skill-level groups provided accurate and comprehensive coverage of each specialty job.

Initial analysis of the STS, examining experience (TAFMS), and DAFSC groups, reveals the document was supported by the percent of personnel performing matched tasks. However, several tasks with relatively high percent members performing were not covered. Likewise, the Phase I POIs and and Phase II CTSS and POIs reflected several unreferenced tasks with high percentages of appropriate personnel performing. Training personnel should look at all areas of the STS, POIs, and CTSS for possible revision to include additional elements to cover high performance tasks currently not referenced.

The examination of responses to job satisfaction questions revealed that satisfaction is somewhat improved since the 1982 surveys. The 452X1 career ladder also reflects similar or slightly higher levels of satisfaction when compared to other mission maintenance specialists. Indicators across career ladder specialty jobs exhibited displeasure among members performing Logistics Support functions. This generally lower level of satisfaction among this job should alert Air Force managers and supervisors to be aware of this dissatisfying job and attempt to implement measures to improve it.

The findings of this OSR come directly from survey data collected from F-15 Avionic Systems specialists worldwide. These data are readily available to training and utilization personnel, functional managers, and any other interested parties having a need for such information. Much of the data are compiled into extracts which are an excellent tool in the decision-making process. These data extracts should be used whenever a training or utilization decision is made.

APPENDIX A
SELECTED REPRESENTATIVE TASKS PERFORMED BY
CAREER LADDER SPECIALTY JOB GROUPS

TABLE I
ATTACK CONTROL SYSTEMS CLUSTER
(STG 112)

VARIATIONS: B/C Systems Technicians (STG 317)
Shift Supervisors (STG 349, 346)
Radar (OT&E) Technicians (GRP 45)

OF PEOPLE IN GROUP: 230
% OF TOTAL SAMPLE: 22%

% ASSIGNED CONUS: 71%
MAJCOM: 70% TAC (11% PACAF, 10% USAFE)
FUNCTIONAL AREA: Flightline

AVERAGE TAFMS: 67 months
AVERAGE TICF: 50 months
AVERAGE PAYGRADE: E-4 (E-3/E-5)

AVERAGE # OF TASKS: 107
AVERAGE # PERSONS SUPERVISE: 1

UNIQUE TEST EQUIPMENT USED: Boresight
Generator, High PRF Target
Generator, Radar Target

UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: Maintenance Crane
Nitrogen Servicing Equipment

TOP DUTIES

38% H MAINTAINING ATTACK CONTROL SYSTEMS
25% G PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
17% F PERFORMING GENERAL AIRCRAFT HANDLING TASKS
8% E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS

TYPICAL TASKS

PERCENT
MEMBERS
PERFORMING

H301	Isolate malfunctions within inertial navigation systems (INS)	100
H299	Isolate malfunctions within HUD systems	99
H338	Remove or install RDR system LRUs	99
G287	Remove or install waveguides	98
H297	Isolate malfunctions within central computer (CC) systems	98
H318	Perform operational checkout and BIT of HUD systems	98
H324	Perform operational checkout of INSs	98
F186	Connect or disconnect aircraft external cooling air units	97
F187	Connect or disconnect aircraft external power	97
G271	Inspect waveguides	97
H298	Isolate malfunctions within fire control radar (RDR) Systems	97
H317	Perform operational checkout and built-in test (BIT) of CC systems	97

TABLE I (CONTINUED)
ATTACK CONTROL SYSTEMS CLUSTER
(STG 112)

<u>TYPICAL TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
H322 Perform operational checkout and BIT of RDR systems	97
H329 Remove or install HUD system line replaceable units (LRU)	97
G270 Inspect triaxial cables and connectors	96
H296 Isolate malfunctions to navigation control indicator (NCI) panels	96
H326 Remove or install CC systems	96
H302 Isolate malfunctions within lead computing gyros (LCG)	95
H304 Isolate malfunctions within overload warning systems (OWS)	95
F188 Connect or disconnect aircraft hydraulic test stands or hydraulic power	94
H320 Perform operational checkout and BIT of LCGs	94
H315 Perform checkout of NCI panels	93
H325 Perform operational checkout of OWSs	93
H332 Remove or install LCGs	93
H336 Remove or install NCI panel digital readout display (DRD) units	93
G276 Isolate malfunctions within triaxial cables and connectors	92
H337 Remove or install OWS LRUs	92
G278 Perform safety wiring	91
G285 Remove or install triaxial cables	90
H306 Isolate system malfunctions using NCI and CC data word recall	90
E130 Initiate AFTU Forms 350 (Reparable Item Processing Tag)	82
B49 Supervise Apprentice Avionic Attack Control Systems Specialists (AFSC 45231A)	46
A1 Assign maintenance and repair work	40
A8 Determine work priorities	39
H310 Perform boresight alignment checks of radar antenna mounts	39
H312 Perform boresight physical alignments of HUD mounts	38
H313 Perform boresight physical alignments of IMU mounts	36
B50 Supervise Avionic Attack Control Systems Specialists (AFSC 45251A)	33
H314 Perform boresight physical alignments of LCG mounts	32
J424 Perform operational checkout and BIT of AAI systems	25
I393 Remove or install HSI system LRUs	23
I373 Perform operational checkout and BIT of HSI systems	21
J436 Remove or install AAI system line replaceable units (LRU)	21

TABLE II
INSTRUMENT AND FLIGHT CONTROL SYSTEM CLUSTER
(STG 98)

VARIATIONS: A/C Systems Technicians (STG 305)
Shift Supervisors (STG 128, 110)

# OF PEOPLE IN GROUP: 206	% ASSIGNED CONUS: 66%
% OF TOTAL SAMPLE: 20%	MAJCOM: 64% TAC (14% USAFE, 13% PACAF)
	FUNCTIONAL AREA: Flightline

AVERAGE TAFMS: 58 MONTHS	AVERAGE # OF TASKS: 127
AVERAGE TICF: 46 MONTHS	AVERAGE # PERSONS SUPERVISE: 1
AVERAGE PAYGRADE: E-4 (E-2/E-5)	

UNIQUE TEST EQUIPMENT USED:

Angle-of-Attack Probe Torque Tester	Inflight Monitor
Automatic Flight Control Systems (AFSCS)	Linear Gauge (Pogo Stick)
Box, Breakout	Ramp Test Plug
Calibrator, Compass	Test Set, Flight Logic (AFSCS)
Calibrator, Standby Compass	Test Set, Fuel Quantity Gauging
Control Augment SYS (CAS) Shutdown	Tester, Fuel Quantity
Inhibit Cable Assembly	Torque Strap Adapter
Hydrometer	

UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: Air Compressor

TOP DUTIES

52% I MAINTAINING INSTRUMENT AND FLIGHT CONTROL SYSTEMS
17% F PERFORMING GENERAL AIRCRAFT HANDLING TASKS
14% G PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
7% E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS

<u>TYPICAL TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
I344 Isolate malfunctions within air inlet control systems (AICS)	100
I345 Isolate malfunctions within attitude heading reference systems (AHRs)	100
I370 Perform operational checkout and BIT of AHRs	100
I346 Isolate malfunctions within automatic flight control systems (AFCS)	99
I350 Isolate malfunctions within fuel flow indicating systems	99
I351 Isolate malfunctions within fuel quantity indicating systems	99

TABLE II (CONTINUED)

Instrument and Flight Control System Cluster
(STG 98)

TYPICAL TASKS	PERCENT MEMBERS PERFORMING
I357 Isolate malfunctions within pitot static, heater, and instrument systems	99
I372 Perform operational checkout and BIT of fuel quantity indicating systems	99
F186 Connect or disconnect aircraft external cooling air units	98
F187 Connect or disconnect aircraft external power	98
I353 Isolate malfunctions within hydraulic pressure indicating systems	98
I371 Perform operational checkout and BIT of AICSS	98
I398 Remove or install pitot static, heater, and instrument system LRUs	98
I341 Calibrate fuel quantity indicating systems	97
I359 Isolate malfunctions within standby attitude indicators	97
I362 Maintain pitot static, heater, and instrument systems	97
I387 Remove or install AICS LRUs	97
I400 Remove or install standby attitude indicator LRUs	97
F188 Connect or disconnect aircraft hydraulic test stands or hydraulic power	96
G277 Perform aircraft safe for maintenance checks	96
I374 Perform operational checkout and BIT of SDR systems	96
I358 Isolate malfunctions within signal data recording (SDR) systems	94
I363 Maintain SDR systems	92
G272 Isolate malfunctions within aircraft wiring	91
G291 Trace wiring, system, and interface diagrams	91
F261 Walk wings or tails during aircraft towing operations	88
F232 Position or remove aircraft chocks or safety pins	78
E130 Initiate AFTO Forms 350 (Reparable Item Processing Tag)	74
H292 Isolate malfunctions to control stick grips	59
H327 Remove or install control stick grips	58
B51 Supervise Apprentice Avionic Instrument and Flight Control Systems Specialists (AFSC 45231B)	42
A1 Assign maintenance and repair work	33
B52 Supervise Avionic Instrument and Flight Control Systems Specialists (AFSC 45251B)	32
A8 Determine work priorities	31
I364 Perform boresight alignment checks of displacement gyro (DG) mounts	30
C81 Write APRs	29
I365 Perform boresight physical alignments of DG mounts	28
H331 Remove or install INS LRUs	23
H326 Remove or install CC systems	21
H338 Remove or install RDR system LRUs	20
J405 Code Mode 4 crypto equipment	15
J428 Perform operational checkout and BIT of TACAN systems	15

TABLE III

Communication, Navigation, and Penetration Aids Systems Cluster
(STG 71)

VARIATIONS: A Systems Technicians (STG 448)
 B Systems Technicians (STG 383)
 Shift Supervisors (STG 205)

OF PEOPLE IN GROUP: 219%
 % OF TOTAL SAMPLE: 21%

ASSIGNED CONUS: 70%
 MAJCOM: 65% TAC (15% USAFE, 11% PACAF)
 FUNCTIONAL AREA: Flightline

AVERAGE TAFMS: 55 MONTHS
 AVERAGE TICF: 42 MONTHS
 AVERAGE PAYGRADE: E-3 (E-2/E-5)

AVERAGE # OF TASKS: 97
 # PERSONS SUPERVISE: 2

UNIQUE TEST EQUIPMENT USED: Improved Radar Simulator (AN/APM-427)
 Test Set, Air-to-Air IFF Interrogator (AAI)
 Test Set, IFF Transponder (AN/ASM-424)
 Test Set, Instrument Landing System (ILS)
 Tester, WATTS
 Thru-Line WATT Meter

UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: Aircraft Radio
 Bomb Lift

TOP DUTIES

47% J MAINTAINING COMMUNICATIONS, NAVIGATION, AND PENETRATION
 AIDS SYSTEMS
 20% G PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
 14% F PERFORMING GENERAL AIRCRAFT HANDLING TASKS
 8% E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS

TYPICAL TASKS	PERCENT MEMBERS PERFORMING
J424 Perform operational checkout and BIT of AAI systems	100
J426 Perform operational checkout and BIT of IFF systems	100
J412 Isolate malfunctions within identification friend or foe (IFF) systems	99
J410 Isolate malfunctions within air-to-air IFF interrogator (AAI) systems	98
J413 Isolate malfunctions within instrument landing systems (ILS)	97
J415 Isolate malfunctions within tactical air navigation (TACAN) systems	97
J420 Isolate malfunctions within ultra high frequency (UHF) communication and audio signal systems	97

TABLE III (CONTINUED)

Communication, Navigation, and Penetration Aids Systems Cluster
(STG 71)

TYPICAL TASKS	PERCENT MEMBERS PERFORMING
J432 Perform operational checkout and BIT of UHF communication and audio signal systems	97
J439 Remove or install IFF system LRUs	97
F186 Connect or disconnect aircraft external cooling air units	96
F187 Connect or disconnect aircraft external power	95
J405 Code Mode 4 crypto equipment	95
J407 Isolate malfunctions to Mode 4 crypto equipment	95
J414 Isolate malfunctions within interference blanker systems (IBS)	95
J427 Perform operational checkout and BIT of Mode 4 crypto equipment	95
G277 Perform aircraft safe for maintenance checks	94
J411 Isolate malfunctions within automatic direction finder (ADF) systems	94
J428 Perform operational checkout and BIT of TACAN systems	94
G291 Trace wiring, system, and interface diagrams	93
G263 Analyze avionics status panel (ASP) latch data	84
F190 Electrically ground aircraft	74
F232 Position or remove aircraft chocks or safety pins	71
E123 Complete AF Forms 2005 (Issue/ur. in Request)	59
H295 Isolate malfunctions to right-hand throttle grips	51
B53 Supervise Apprentice Avionic Communication, Navigation, and Penetration Aids Systems Specialists (AFSC 45231C)	43
H334 Remove or install right-hand throttle grips	42
A1 Assign maintenance and repair work	34
A8 Determine work priorities	31
B54 Supervise Avionic Communication, Navigation, and Penetration Aids Systems Specialists (AFSC 45231C)	27
I373 Perform operational checkout and BIT of HSI systems	26
I388 Remove or install BIT control panel system LRUs	25
I394 Remove or install hydraulic pressure indicating system	2
I347 Isolate malfunctions within built-in test (BIT) control panel systems	22
H338 Remove or install RDR system LRUs	17

TABLE IV

MULTISYSTEMS CLUSTER
(STG 116)

VARIATIONS: A/B Systems Technicians (STG 266)
A Systems Tech (STG 338, 432)
B Systems Tech (STG 362,363)
C Systems Technicians (STG 290, 286)
Shift Supervisors (STG 196)

OF PEOPLE IN GROUP: 155
% OF TOTAL SAMPLE: 15%

% ASSIGNED CONUS: 55%
MAJCOM: 52% TAC (25% USAFE, 8% PACAF)
FUNCTIONAL AREA: Flightline

AVERAGE TAFMS: 119 MONTHS
AVERAGE TICF: 90 MONTHS
AVERAGE PAYGRADE: E-5 (E-6)

AVERAGE # OF TASKS: 228
AVERAGE # PERSONS SUPERVISE: 6

UNIQUE TEST EQUIPMENT USED: Tester, AZ/EL Diode

UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: Oil Servicing Cart
Portable Generator

TOP DUTIES

19%	I	MAINTAINING INSTRUMENT AND FLIGHT CONTROL SYSTEMS
16%	H	MAINTAINING ATTACK CONTROL SYSTEMS
15%	J	MAINTAINING COMMUNICATIONS, NAVIGATION, AND PENETRATION AIDS SYSTEMS
14%	G	PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
13%	F	PERFORMING GENERAL AIRCRAFT HANDLING TASKS
6%	E	PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
5%	B	DIRECTING AND IMPLEMENTING

TYPICAL TASKS

PERCENT
MEMBERS
PERFORMING

G277	Perform aircraft safe for maintenance checks	99
G291	Trace wiring, system, and interface diagrams	99
H331	Remove or install INS LRUs	98
H338	Remove or install RDR system LRUs	97
H319	Perform operational checkout and BIT of IG systems	96
H322	Perform operational checkout and BIT of RDR systems	96
H330	Remove or install IG system LRUs	96
H332	Remove or install LCGs	96
F188	Connect or disconnect aircraft hydraulic test stands or hydraulic power	95
G273	Isolate malfunctions within coaxial cables and connectors	95
G289	Repair chafed areas	95

TABLE IV (CONTINUED)

MULTISYSTEMS CLUSTER
(STG 116)

TYPICAL TASKS	PERCENT MEMBERS PERFORMING
I393 Remove or install HSI system LRUs	95
G280 Remove or install coaxial cables	94
G281 Remove or install coaxial connectors	94
J432 Perform operational checkout and BIT of UHF communication and audio signal systems	94
J449 Remove or install UHF communication and audio signal system LRUs	94
I384 Remove or install ADC system LRUs	93
I388 Remove or install BIT control panel system LRUs	93
G270 Inspect triaxial cables and connectors	92
I386 Remove or install AHRS LRUs	92
J436 Remove or install AAI system line replaceable units (LRU)	92
J438 Remove or install IBS LRUs	92
H326 Remove or install CC systems	90
I376 Perform operational checkout of BIT control panel systems	90
J437 Remove or install ADF system LRUs	90
J440 Remove or install ILS LRUs	90
E116 Annotate DD Forms 1387-2 (Special Handling Data/Certification)	86
F232 Position or remove aircraft chocks or safety pins	82
B53 Supervise Apprentice Avionic Communication, Navigation, and Penetration Aids Systems Specialists (AFSC 45231C)	65
B54 Supervise Avionic Communication, Navigation, and Penetration Aids Systems Specialists (AFSC 45251C)	65
B50 Supervise Avionic Attack Control Systems Specialists (AFSC 45251A)	64
B51 Supervise Apprentice Avionic Instrument and Flight Control Systems Specialists (AFSC 45231B)	59
B52 Supervise Avionic Instrument and Flight Control Systems Specialists (AFSC 45251B)	59

TABLE V

A Systems FTD Instructors (STG 65)
B Systems FTD Instructors (STG 41)
C Systems FTD Instructors (STG 153)
Training NCOS (STG 105)
Technical School Instructors (STG 99)

OF PEOPLE IN GROUP: 39
% OF TOTAL SAMPLE: 4%

% ASSIGNED CONUS: 79%
MAJCOM: 85% ATC (10% TAC)
FUNCTIONAL AREA: FTD Classroom, Unit
Training, Technical
School

AVERAGE TAFMS: 109 MONTHS
AVERAGE TICF: 97 MONTHS
AVERAGE PAYGRADE: E-5 (E-4/E-6)

AVERAGE # OF TASKS: 40
AVERAGE # PERSONS SUPERVISE: 1

UNIQUE TEST EQUIPMENT USED: Multimeter, Analog
Multimeter, Digital
TTU-205 C/E

UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED:

- Aircraft Canopy System
- Aircraft Interphone
- Aircraft Seat Adjustment System
- External Cooling Air Unit
- External Electrical Power Unit
- Hydraulic Test Stand
- Maintenance Stand

TOP DUTIES

48%	D	TRAINING
11%	E	PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
7%	F	PERFORMING GENERAL AIRCRAFT HANDLING TASKS
7%	B	DIRECTING AND IMPLEMENTING
6%	G	PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
6%	C	EVALUATING AND INSPECTING

TYPICAL TASKS

D84	Administer tests	87
D108	Score tests	85
D89	Conduct resident course classroom training	67
D91	Counsel trainees on training progress	67

PERCENT
MEMBERS
PERFORMING

TABLE V (CONTINUED)
 AVIONICS SYSTEMS TRAINING CLUSTER
 (STG 24)

<u>TYPICAL TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
D109 Write test questions	67
B31 Counsel personnel on personal or military-related matters	59
D101 Evaluate progress of trainees	59
E160 Maintain Technical Order files	59
G290 Research Technical Orders	56
D85 Annotate training records	49
E136 Initiate or review Technical Order system forms, such as AFTO Forms 22, 27, 32, 110, 110A, 110B, and 131	49
G291 Trace wiring, system, and interface diagrams	49
D99 Evaluate effectiveness of training programs	46
F187 Connect or disconnect aircraft external power	46
F223 Perform preuse inspection of hydraulic test stands or hydraulic power	44
C76 Inspect personnel for compliance with military standards	41
D96 Develop resident course training materials	38
D97 Direct or implement training programs	38
E139 Inspect tools or equipment	33
I375 Perform operational checkout of AFCSS	23
J427 Perform operational checkout and BIT of Mode 4 crypto equipment	23
I366 Perform leak checks of pitot static systems	21
J431 Perform operational checkout and BIT of TEWS RWRs	21
D105 Plan or schedule training, such as OJT and ancillary training	18
H319 Perform operational checkout and BIT of IG systems	13
H325 Perform operational checkout of OWSs	13

TABLE VI
Avionics Systems Supervisors Cluster
(STG049)

VARIATIONS: NCOIC Debriefers (STG 67)
Specialist Flight Chiefs (STG 117)
Production Supervisors (STG 136)

# OF PEOPLE IN GROUP: 55	% ASSIGNED CONUS: 64%
% OF TOTAL SAMPLE: 5%	MAJCOM: 60% TAC (20% USAFE, 11% PACAF)
	FUNCTIONAL AREA: Debriefing, Office, Flightline

AVERAGE TAFMS: 179 MONTHS	AVERAGE # OF TASKS: 67
AVERAGE TICF: 112 MONTHS	AVERAGE # PERSONS SUPERVISE: 9
AVERAGE PAYGRADE: E-7 (E-5/E-6)	

UNIQUE TEST EQUIPMENT USED: N/A
UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: N/A

TOP DUTIES

24% B DIRECTING AND IMPLEMENTING
21% A ORGANIZING AND PLANNING
19% C EVALUATING AND INSPECTING
16% D TRAINING
12% E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS

<u>TYPICAL TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
C81 Write APRs	91
A20 Plan or schedule work assignments	89
A16 Establish performance standards for subordinates	87
B31 Counsel personnel on personal or military-related matters	85
C76 Inspect personnel for compliance with military standards	85
C82 Write recommendations for awards and decorations	85
B46 Interpret policies, directives, or procedures for subordinates	84
B30 Conduct supervisory orientations of newly assigned personnel	82
B28 Adjust daily maintenance plans to meet operational commitments	80
A21 Plan or schedule work priorities	78
D101 Evaluate progress of trainees	78
B56 Supervise military personnel with AFSC other than 452X1	76
B41 Implement self-inspection programs	73
A2 Assign personnel to duty positions	69
B55 Supervise Avionic System Technicians (AFSC 45271)	69
C74 Indorse airman performance reports (APR)	67
E138 Initiate, annotate, or review aircraft flight or maintenance records, such as AFTO Forms 781 series	62
C72 Evaluate work schedules	59

TABLE VII
LOGISTICS SUPPORT CLUSTER
(GRP 44)

VARIATIONS: Supply Support NCO (STG 90)
Tool Crib Assistant (STG 73)

OF PEOPLE IN GROUP: 37
% OF TOTAL SAMPLE: 4%

% ASSIGNED CONUS: 57%
MAJCOM: 51% TAC (22% PACAF, 19% USAF)
FUNCTIONAL AREA: Tool Crib

AVERAGE TAFMS: 98 MONTHS
AVERAGE TICF: 82 MONTHS
AVERAGE PAYGRADE: E-4 (E-3/E-6)

AVERAGE # OF TASKS: 37
AVERAGE # PERSONS SUPERVISE: 3

UNIQUE TEST EQUIPMENT USED: N/A
UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: N/A

TOP DUTIES

75% E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
8% A ORGANIZING AND PLANNING
8% B DIRECTING AND IMPLEMENTING

<u>TYPICAL TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
E141 Inventory tools, such as consolidated tool kits (CTK)	100
E139 Inspect tools or equipment	97
E142 Issue tools, equipment, or supplies	95
E167 Perform periodic inspection of tools or equipment	92
E163 Maintain tool cribs	89
E168 Perform routine inspection of tools or equipment	89
E140 Inventory equipment or supplies	84
E123 Complete AF Forms 2005 (Issue/Turn in Request)	76
E165 Package tools or equipment for shipment or deployment	70
E119 Annotate or initiate AF Forms 1297 (Temporary Issue Receipt)	65
E169 Perform security checks of tool crib, hangar, or vehicles	57
E173 Process tools or equipment for shipment or deployment	51
E171 Process damaged tools for distribution and replacement	49
B48 Review test equipment calibration schedules	43
B35 Direct maintenance of Technical Order (TO) files	38
A4 Coordinate calibration of special tools or test equipment with Precision Measurement Equipment Laboratory (PMEL)	35
E120 Annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))	35
E161 Maintain test equipment calibration/repair reports, such as TMDE or PMEL	35
E181 Review or update PMEL or TMDE listings	30
E158 Maintain special tools or equipment calibration records	27

TABLE VIII
QUALITY ASSURANCE INSPECTORS IJT
(STG 79)

VARIATIONS: N/A

OF PEOPLE IN GROUP: 8
% OF TOTAL SAMPLE: 1%

% ASSIGNED CONUS: 88%
MAJCOM: 88% TAC
FUNCTIONAL AREA: Quality Assurance

AVERAGE TAFMS: 162 MONTHS
AVERAGE TICF: 94 MONTHS
AVERAGE PAYGRADE: E-5/E-7

AVERAGE # OF TASKS: 65
AVERAGE # PERSONS SUPERVISE: 2

UNIQUE TEST EQUIPMENT USED: N/A
UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: N/A

TOP DUTIES

24%	C	EVALUATING AND INSPECTING
23%	E	PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
17%	G	PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
12%	F	PERFORMING GENERAL AIRCRAFT HANDLING TASKS
10%	A	ORGANIZING AND PLANNING

TYPICAL TASKS

PERCENT
MEMBERS
PERFORMING

C67	Evaluate personnel for compliance with performance standards or Technical Orders	100
C75	Inspect flightline maintenance actions	100
E138	Initiate, annotate, or review aircraft flight or maintenance records, such as AFTO Forms 781 series	100
A12	Develop quality assurance programs	88
C70	Evaluate suggestions	88
C83	Write staff studies, surveys, or special reports, other than training reports	88
E168	Perform routine inspection of tools or equipment	88
G266	Inspect chafing problem areas	88
A23	Schedule equipment or facility inspections	75
C62	Evaluate maintenance and inspection report findings	75
C71	Evaluate Technical Order improvement reports	75
C77	Investigate accidents or incidents	75
G271	Inspect waveguides	75
C57	Analyze recurring troubles on equipment identified by deficiency or service reports	63
C69	Evaluate safety or security programs	63

TABLE IX
DEBRIEFERS IJT
(STG 60)

VARIATIONS: N/A

# OF PEOPLE IN GROUP: 5	% ASSIGNED CONUS: 80%
% OF TOTAL SAMPLE: .5%	MAJCOM: 80% TAC (20% USAF)
	FUNCTIONAL AREA: Debriefing
AVERAGE TAFMS: 87 MONTHS	AVERAGE # OF TASKS: 12
AVERAGE TICF: 56 MONTHS	AVERAGE # PERSONS SUPERVISE: 1
AVERAGE PAYGRADE: E-5 (E-4)	

UNIQUE TEST EQUIPMENT USED: Automatic Flight Control Systems (AFSCS)
Box, Breakout
Hydrometer
Inflight Monitor
Test Set, Fuel Quantity Gaugung
Tester, Fuel Quantity

UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: Air Compressor
Gas Turbine Compressor

TOP DUTIES

47%	E	PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
29%	G	PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
11%	D	TRAINING
7%	C	EVALUATING AND INSPECTING

TYPICAL TASKS

PERCENT
MEMBERS
PERFORMING

E138	Initiate, annotate, or review aircraft flight or maintenance records, such as AFTO Forms 781 series	100
E147	Maintain debriefing forms	100
G264	Debrief aircrews	100
G263	Analyze avionics status panel (ASP) latch data	80
D88	Conduct OJT	40
E112	Annotate AFTO Forms 95 (Significant Historical Data)	40
E122	Compile data for reports, such as Signal Data Recorder (SDR) report and TEWS status report	40
E133	Initiate or complete AFTO Forms 349 (Maintenance Data Collection Record)	40
E134	Initiate or complete AFTO Forms 349-3 (Maintenance Data Collection Record (Automated))	40
C62	Evaluate maintenance and inspection report findings	20
C63	Evaluate maintenance data collection (MDC) reports	20

TABLE X
FLIGHTLINE EXPEDITERS IJT
(STG 78)

VARIATIONS: N/A

OF PEOPLE IN GROUP: 5
% OF TOTAL SAMPLE: .5%

% ASSIGNED CONUS: 80%
MAJCOM: 80% TAC (20% AFSC)
FUNCTIONAL AREA: Flightline

AVERAGE TAFMS: 206 MONTHS
AVERAGE TICF: 78 MONTHS
AVERAGE PAYGRADE: E-6 (E-7)

AVERAGE # OF TASKS: 16
AVERAGE # PERSON SUPERVISE: 5

UNIQUE TEST EQUIPMENT USED: N/A
UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: N/A

TOP DUTIES

47%	A	ORGANIZING AND PLANNING
26%	B	DIRECTING AND IMPLEMENTING
14%	E	PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
10%	C	EVALUATING AND INSPECTING

TYPICAL TASKS

PERCENT
MEMBERS
PERFORMING

A5	Coordinate maintenance work with appropriate personnel or agencies	100
A8	Determine work priorities	100
A1	Assign maintenance and repair work	80
A6	Determine logistics requirements, such as space, personnel, or equipment	80
B28	Adjust daily maintenance plans to meet operational commitments	80
B33	Direct flightline maintenance activities	60
B56	Supervise military personnel with AFSC other than 452X1	60
C75	Inspect flightline maintenance actions	60
A20	Plan or schedule work assignments	40
B36	Direct utilization or maintenance of equipment	40

TABLE XI
CONTROLLERS IJT
(STG 61)

VARIATIONS: N/A

OF PEOPLE IN GROUP: 5
% OF TOTAL SAMPLE: .5%

% ASSIGNED CONUS: 40%
MAJCOM: 60% TAC (40% USAF)
FUNCTIONAL AREA: MAINTENANCE OPERATIONAL
CONTROL CENTER

AVERAGE TAFMS: 148 MONTHS
AVERAGE TICF: 79 MONTHS
AVERAGE PAYGRADE: E-5 (E-6)

AVERAGE # OF TASKS: 11
AVERAGE # PERSONS SUPERVISE: 2

UNIQUE TEST EQUIPMENT USED: N/A
UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: N/A

TOP DUTIES

37% A ORGANIZING AND PLANNING
22% E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
18% D TRAINING
16% B DIRECTING AND IMPLEMENTING

TYPICAL TASKS

PERCENT
MEMBERS
PERFORMING

A5	Coordinate maintenance work with appropriate personnel or agencies	100
E145	Maintain aircraft and parts status indicators, such as boards, graphs, or charts	100
D88	Conduct OJT	88
A6	Determine logistics requirements, such as space, personnel, or equipment	60
B32	Direct development of status indicators, such as boards, graphs, or charts	60
D85	Annotate training records	60
B31	Counsel personnel on personal or military-related matters	40
A20	Plan or schedule work assignments	20
E148	Maintain deficiency, service, or status reports	20
E149	Maintain dispatch logs or boards	20
E154	Maintain microfiche stock files	20
E155	Maintain nondestructive inspection (NDI) records	20

TABLE XII
PREVENTIVE MAINTENANCE IJT
(STG 130)

VARIATIONS: Flight Test Avionics Instrumentation Technicians

# OF PEOPLE IN GROUP: 5	% ASSIGNED CONUS: 80%
% OF TOTAL SAMPLE: .5%	MAJCOM: 60% AFSC (20% AFLC, 20% PACAF)
	FUNCTIONAL AREA: Flightline

AVERAGE TAFMS: 155 MONTHS	AVERAGE # OF TASKS: 123
AVERAGE TICF: 77 MONTHS	AVERAGE # PERSONS SUPERVISE: 4
AVERAGE PAYGRADE: E-5/E-7	

UNIQUE TEST EQUIPMENT USED: Box, Breakout
Hydrometer
Test Set, Air-to-Air IFF Interrogator (AAI)
Test Set, IFF Transponder (AN/ASM-424)
Test Set, Instrument Landing System (ILS)
Thru-Line WATT Meter

UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: Air Compressor
Aircraft Radio
Liquid Oxygen Servicing Equipment
Maintenance Crane
Nitrogen Servicing Equipment
Oil Servicing Cart
Portable Generator
Tow Vehicles

TOP DUTIES

37%	1	F	PERFORMING GENERAL AIRCRAFT HANDLING TASKS
25%	1	G	PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
8%	1	E	PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
7%	1	A	ORGANIZING AND PLANNING
6%	1	B	DIRECTING AND IMPLEMENTING

<u>TYPICAL TASKS</u>		<u>PERCENT MEMBERS PERFORMING</u>
A1	Assign maintenance and repair work	100
E138	Initiate, annotate, or review aircraft flight or maintenance records, such as AFTO Forms 781 series	100
F198	Jack or level aircraft	100
F223	Perform preuse inspection of hydraulic test stands or hydraulic power	100
F227	Perform preuse inspection of oil servicing carts	100
G265	Inspect aircraft wiring	100

TABLE XII (CONTINUED)
PREVENTIVE MAINTENANCE IJT
(STG 130)

TYPICAL TASKS	PERCENT MEMBERS PERFORMING
G268 Inspect electrical relays	100
G274 Isolate malfunctions within electrical relays	100
G282 Remove or install electrical relays	100
G289 Repair chafed areas	100
A17 Establish work methods or controls	80
B55 Supervise Avionic System Technicians (AFSC 45271)	80
F191 Identify or classify aircraft fuel leaks	80
F204 Perform aircraft engine removal preparation procedures	80
F209 Perform aircraft supplemental inspections	80
F235 Remove or install aircraft brake assemblies	80
F238 Remove or install aircraft electrical system batteries	80
F242 Remove or install aircraft light lenses	80
F252 Service aircraft engine oil systems	80

TABLE XIII

AIRCRAFT BATTLE DAMAGE REPAIR IJT
(STG 92)

VARIATIONS: N/A

OF PEOPLE IN GROUP: 5
% OF TOTAL SAMPLE: .5%% ASSIGNED CONUS: 80%
MAJCOM: 80% AFLC (20% PACAF)
FUNCTIONAL AREA: FlightlineAVERAGE TAFMS: 97 MONTHS
AVERAGE TICF: 92 MONTHS
AVERAGE PAYGRADE: E-5AVERAGE # OF TASKS: 43
AVERAGE # PERSONS SUPERVISE: 0

UNIQUE TEST EQUIPMENT USED: N/A

UNIQUE AIRCRAFT SYSTEM/SUPPORT EQUIPMENT USED: Air Compressor
Oil Servicing CartTOP DUTIES43% G PERFORMING GENERAL AVIONIC SYSTEMS MAINTENANCE TASKS
24% E PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS
21% F PERFORMING GENERAL AIRCRAFT HANDLING TASKSTYPICAL TASKSPERCENT
MEMBERS
PERFORMING

F225	Perform preuse inspection of maintenance stands	100
G272	Isolate malfunctions within aircraft wiring	100
G274	Isolate malfunctions within electrical relays	100
G280	Remove or install coaxial cables	100
G284	Remove or install multipin connectors (cannon plug)	100
G288	Repair aircraft wiring	100
G291	Trace wiring, system, and interface diagrams	100
E139	Inspect tools or equipment	80
F215	Perform preuse inspection of air compressors	80
F221	Perform preuse inspection of ground heaters and blowers	80
E140	Inventory equipment or supplies	60